

LOSS COSTS – INFORMATION

JULY 2, 2019

COMMERCIAL PROPERTY

LI-CF-2019-061

KENTUCKY COMMERCIAL FIRE AND ALLIED LINES LOSS COST LEVEL ANALYSIS FURNISHED FOR INFORMATION

KEY MESSAGE

This analysis is provided for your information. We are NOT revising the current loss costs based on this analysis.

BACKGROUND

In circular [LI-CF-2019-041](#), we provided you with information about the Commercial Fire and Allied Lines loss cost level experience review.

ISO ACTION

We are NOT implementing any changes, at this time, to the current Commercial Fire and Allied Lines advisory prospective loss costs for this jurisdiction.

SUPPLEMENTARY INFORMATION

We are including the following supplementary information:

- An Actuarial Analysis Supplement which provides discussion and analysis of changes in the experience and adjustments used to derive the loss cost level analysis.
- The loss cost exhibits contained in the loss cost level analysis in a Microsoft® Excel workbook.

NOTE: This supplementary information is not part of the loss cost level analysis.

COMPANY ACTION

You may wish to evaluate your rate level needs.

Some calculations included in the attached analysis involve areas of ISO staff judgment. You should carefully review and evaluate your own experience in order to determine whether the indications are appropriate for your use.

If you decide to independently file a rate or loss cost revision based on this analysis, you must:

- Comply with the applicable regulatory filing requirements; and
- Advise your production forces about implementation of your revised rates or loss cost adjustments.

REFERENCE(S)

[LI-CF-2019-041](#) (06/12/2019) Commercial Fire And Allied Lines Experience Level Indications Reviewed By ISO Staff

ATTACHMENT(S)

- Loss Cost Level Analysis
- Actuarial Analysis Supplement
- Excel Workbook

FILES AVAILABLE FOR DOWNLOAD

To download all files associated with this circular, including attachments in the full circular PDF and/or any additional files not included in the PDF, search for the circular number on [ISOnet Circulars](#). Then click the Word/Excel link under the Full Circular column on the Search Results screen.

Please note that in some instances, not all files listed in the Attachment(s) block (if applicable) are included in the PDF.

COPYRIGHT EXPLANATION

The material distributed by Insurance Services Office, Inc. is copyrighted. All rights reserved. Possession of these pages does not confer the right to print, reprint, publish, copy, sell, file, or use same in any manner without the written permission of the copyright owner. Permission is hereby granted to members, subscribers, and service purchasers to reprint, copy, or otherwise use the enclosed material for purposes of their own business use relating to that territory or line or kind of insurance, or subdivision thereof, for which they participate, provided that:

- (A) Where ISO copyrighted material is reprinted, copied, or otherwise used **as a whole**, it must reflect the copyright notice actually shown on such material.
- (B) Where ISO copyrighted material is reprinted, copied, or otherwise used **in part**, the following credit legend must appear at the bottom of each page so used:
Includes copyrighted material of Insurance Services Office, Inc., with its permission.

DATA QUALITY

Statistical plan data reported to ISO is first processed through a system of rigorous automated data verification procedures so that only valid data would be used for ratemaking. Subsequent to this initial data submission review, additional analyses on the statistical plan data involving an even more customized data review for this line was performed by staff. During these processes, various data records were excluded from the review. The ISO staff responsible for this circular also reviewed the data for reasonableness.

ACKNOWLEDGMENT OF ACTUARIAL QUALIFICATIONS

The American Academy of Actuaries' "Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States" requires that an actuary issuing a Statement of Actuarial Opinion should include an acknowledgment with the opinion that he/she has met the qualification standards of the AAA. ISO considers this loss cost document a Statement of Actuarial Opinion; therefore we are including the following acknowledgment:

I, Rimma Maasbach, am an Actuarial Consultant in Actuarial Operations for ISO and I, Bei Zhou, am an Actuarial Product Director for Commercial Property for ISO. We are jointly responsible for the content of this Statement of Actuarial Opinion. We are both members of the American Academy of Actuaries and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

XACTWARE SOLUTIONS, INC.

This filing incorporates the use of pricing data from Xactware Solutions, Inc., to estimate trends in building costs for commercial properties. Xactware provides computer software solutions for professionals involved in estimating all phases of building construction and repair. The company has been providing building cost data, estimate tracking and data trending to the insurance repair market since 1986. Insurance carriers using Xactware data are responsible for settlement of the majority of property claims in the USA and Canada.

For more information concerning Xactware Solutions, Inc., please see the Contact Information block.

CONTACT INFORMATION

If you have any questions concerning:

- The actuarial content of this circular, please contact:
Rachelle Itzkowitz
Actuarial Operations
201-469-3775
Rachelle.Itzkowitz@verisk.com
propertyactuarial@verisk.com
- The non-actuarial content of this circular, please contact:
Flavio Vento
Production Operations, Compliance and Product Services
201-469-2190
productionoperations@verisk.com
- PCS catastrophe information, please contact:
Joe Louwagie
Property Claim Services
201-469-3126
Joseph.Louwagie@verisk.com
- Xactware Solutions, Inc., please contact:
Xactware Solutions, Inc.
1100 West Traverse Parkway
Lehi, UT 84043
801-764-5900
www.xactware.com
xsales@xactware.com

- Other issues for this circular, please contact Customer Support:

E-mail: info@verisk.com

Phone: 800-888-4476

Callers outside the United States, Canada, and the Caribbean may contact us using our global toll-free number (International Access Code + 800 48977489). For information on all ISO products, visit us at www.verisk.com/iso. To keep abreast of the latest Insurance Lines Services updates, view www.verisk.com/ils.

KENTUCKY

COMMERCIAL FIRE AND ALLIED LINES INSURANCE PROSPECTIVE LOSS COST LEVEL INFORMATION EXECUTIVE SUMMARY

PURPOSE

This document:

- provides advisory prospective loss cost information. The indicated loss cost level represents a -0.6% statewide change from the current ISO level.
 - provides the analyses used to derive the prospective loss costs based on experience through calendar/accident year ending 06/30/2018, evaluated as of 09/30/2018.
-

DEFINITION OF THE ISO PROSPECTIVE LOSS COST

Advisory prospective loss costs in this document are the expected value of that portion of a rate that does not include provisions for expenses (other than loss adjustment expenses) or profit, and are based on historical aggregate losses and loss adjustment expenses adjusted and projected through trending to a future point in time.

LOSS COST LEVEL CHANGES

The statewide monoline prospective loss cost level changes are:

Coverage	Indicated
Basic Group I	-3.3%
Basic Group II	+2.4%
Special Causes of Loss	+0.5%
Total	-0.6%

Indicated loss cost level changes are changes from the current loss cost level.

PRIOR ISO REVISIONS

The latest revisions in this state are:

<u>Reference Document or Filing</u>	CF-2016-RLA1	CF-2015-RLA1
<u>Rates/ Loss Costs</u>	Loss Costs	Loss Costs
<u>Dates Implemented</u>	4/01/2017	2/01/2016
<u>Changes</u>		
Basic Group I	-0.8%	0.0%
Basic Group II	+4.8%	+8.6%
Special Causes of Loss	+10.0%	+9.7%
Total	+3.4%	+4.3%

HISTORICAL SOURCE DATA

The data used in this review is:

- Voluntary experience for ISO reporting companies.
 - Five calendar/accident years ending 06/30/2018 for Basic Group I and Special Causes of Loss.
 - Ten calendar/accident years ending 06/30/2018 for Basic Group II.
-

DISTRIBUTION OF STATEWIDE MONOLINE LOSS COST CHANGES

ISO has distributed the statewide monoline prospective loss cost changes as follows:

- by rating group and territory (where applicable) for Basic Group I.
- by category (building coverage and occupancy type) for Special Causes of Loss.

This has been done based on the experience of each rating group and territory (where applicable), or category for Basic Group I and Special Causes of Loss. Therefore, the resulting changes will vary by rating group and territory (where applicable) for Basic Group I and by category for Special Causes of Loss.

TREND AND
OTHER
ADJUSTMENTS

Loss Trend

For trend purposes, the period of use for this revision is assumed to begin on 01/01/2020. To adjust the loss experience to the levels expected to prevail while the revised loss costs are in effect, trend factors have been applied to the historical incurred losses. These trend factors are based on:

- external cost indices published by the U.S. Government and information provided by Xactware Solutions, Inc.
- changes in multistate average claim costs through fourth quarter 2017.

The "historic" trend factors based on the external indices, i.e. the factors based on historic changes in the indices, vary by year. The latest annual rates of change based on these indices are:

<u>Coverage</u>	<u>Annual Rate of Change</u>
Buildings	3.0%
Contents	1.9%
Time Element	0.9%

Incurred losses are also multiplied by loss trend adjustment factors (LTA's) to reflect trends in claim frequency and claim costs that are different from those exhibited by the external indices. The annual loss trend adjustments are:

<u>Line of Business</u>	<u>Buildings</u>	<u>Contents</u>	<u>Time Element</u>
Basic Group I	-0.3%	0.7%	2.8%
Basic Group II	0.2%	0.6%	2.6%
Special Causes of Loss	0.2%	0.0%	2.8%

This produces a total annual loss trend of:

<u>Line of Business</u>	<u>Buildings</u>	<u>Contents</u>	<u>Time Element</u>
Basic Group I	2.7%	2.6%	3.7%
Basic Group II	3.2%	2.5%	3.5%
Special Causes of Loss	3.2%	1.9%	3.7%

Premium Trend

Over time, insureds tend to purchase increased amounts of insurance in order to compensate for inflation, which results in increased premium revenue.

TREND AND
OTHER
ADJUSTMENTS
(cont'd)

In order to reflect this increase in revenue, ISO uses a premium trend procedure. The premium trend factors are based on observed changes in the annual amount of insurance written for BG I renewal policies for a group of selected companies. The selected annual trends in the amount of insurance are:

Buildings	2.6%
Contents	1.6%
Time Element	0.6%

Other Adjustments

Standard actuarial procedures have been used in calculating the loss costs including loss development and the reflection of all loss adjustment expense. In addition, smoothing procedures have been applied to stabilize the effects of large or excess losses.

TEN LARGEST
COMPANY
GROUPS IN
ISO DATA BASE

COMMERCIAL MULTIPERIL - NON-LIABILITY (ASLOB 51)

1. Cincinnati Insurance Company
2. Travelers Indemnity Company
3. Liberty Mutual Insurance Company
4. Westfield Insurance Company
5. Motorists Mutual Insurance Company
6. Tokio Marine Companies
7. Nationwide Mutual Insurance Company
8. State Auto Mutual Insurance Company
9. Country Mutual Insurance Company
10. Acuity A Mutual Insurance Company

Insurers are listed in descending order based on the percent of statewide written premium volume from Annual Statement Page 15 for year ending 12/31/2017 for Annual Statement Line of Business (ASLOB) 51, Commercial Multiperil - Non-liability.

Although ASLOB 51 includes coverages in addition to commercial fire and allied lines, e.g., crime, inland marine, fidelity, the largest percentage of premium volume is due to fire and allied lines (Basic Group I, Basic Group II, and Special Causes of Loss coverages). ASLOB 51 does not include data reported under monoline fire and allied lines (ASLOBs 10 and 21), which includes both commercial and personal property experience.

SIZE OF ISO
DATA BASE

The market share of all insurers reporting to ISO in this state and included in the ratemaking experience underlying this review as measured by Annual Statement Page 15 written premium for year ending 12/31/2017 is:

Commercial Multi-peril - Non-liability (ASLOB 51) – 39.0%

COMPANY
DECISION

We encourage each insurer to decide independently whether the judgments made and the procedures or data used by ISO in developing the loss costs contained herein are appropriate for its use. We have included within this document the information upon which ISO relied in order to enable companies to make such independent judgments.

The data underlying the enclosed material comes from companies reporting to Insurance Services Office, Inc. Therefore, the ISO experience permits the establishment of a much broader statistical ratemaking base than could be employed by using any individual company's data. A broader data base enhances the validity of ratemaking analysis derived therefrom. At the same time, however, an individual company may benefit from comparison of its own experience to the aggregate ISO experience, and may reach valid conclusions with respect to the manner in which its own costs can be expected to differ from ISO's projections based on the aggregate data.

Some calculations included in this document involve areas of ISO staff judgment. Each company should carefully review and evaluate its own experience in order to determine whether the ISO selected loss costs are appropriate for its use.

This material has been developed exclusively by the staff of Insurance Services Office, Inc.

COPYRIGHT
EXPLANATION

The material distributed by Insurance Services Office, Inc. is copyrighted. All rights reserved. Possession of these pages does not confer the right to print, reprint, publish, copy, sell, file or use same in any manner without the written permission of the copyright owner.

KENTUCKY
COMMERCIAL PROPERTY INSURANCE

SECTION A - SCOPE OF REVISION

Summary of Monoline Prospective Loss Cost Changes (Table 1)	A2
Basic Group I Prospective Loss Cost Changes by Rating Group and Territory (Table 2)	A3-4
Special Causes of Loss Prospective Loss Cost Changes by Category (Table 3)	A5
Potential Impact of BG I, BG II and SCL Monoline Revisions on Commercial Package Policy (Table 4)	A6

SECTION B - CALCULATION OF PROPOSED CHANGES

Overview of Actuarial Procedures - Commercial Property	B2
Calculation of Statewide Prospective Loss Cost Level Changes (Tables 5 - 7)	B3-11
Distribution of Prospective Loss Cost Level Changes (Tables 8 - 12)	B12-45

SECTION C - SUPPORTING MATERIAL

Overview	C2-3
Loss Cost/Rate Level Histories (Tables 13 - 17)	C4-14
Commercial Package Policy Implicit Package Modification Factors (IPMF's) and IPMF Caps (Tables 18 - 20)	C15-19
Trend Procedure (Tables 21 - 27)	C20-42
Loss Development Procedure (Table 28)	C43-47
Excess Loss Procedure (Tables 29 - 32)	C48-61
Credibility (Tables 33, 33A, and 34)	C62-67

SECTION D - ADDITIONAL SUPPORTING MATERIAL

Basic Group I Rating Group Definitions (Table 36)	D2-6
Special Causes of Loss Category Definitions (Table 37)	D7-9
Unadjusted Loss Costs, Incurred Losses, Experience Ratios (Tables 38 - 40)	D10-12
Loss Adjustment Expense Factors (Table 41)	D13-14

KENTUCKY
COMMERCIAL PROPERTY INSURANCE

SECTION A - SCOPE OF REVISION

Summary of Monoline Prospective Loss Cost Changes (Table 1)	A2
Basic Group I Prospective Loss Cost Changes by Rating Group and Territory (Table 2)	A3-4
Special Causes of Loss Prospective Loss Cost Changes by Category (Table 3)	A5
Potential Impact of BG I, BG II and SCL Monoline Revisions on Commercial Package Policy (Table 4)	A6

KENTUCKY

TABLE 1 - SUMMARY OF MONOLINE PROSPECTIVE LOSS COST CHANGES (A)

COVERAGE	INDICATIONS	AGGREGATE LOSS COSTS AT CURRENT LEVEL
BASIC GROUP I	-3.3%	28,947,750
TERRITORY 01	+11.7%	
TERRITORY 02	+6.9%	
TERRITORY 08	-6.2%	
BASIC GROUP II	+2.4%	20,682,342
SPECIAL CAUSES OF LOSS	+0.5%	15,138,749
ALL COVERAGES COMBINED	-0.6%	64,768,841

TERRITORY DEFINITIONS

01 Louisville
 02 Lexington-Fayette
 08 Balance of State

(A) FOR TREND PURPOSES, THE PERIOD OF USE FOR THIS REVISION IS ASSUMED TO BEGIN ON 01/01/2020.

KENTUCKY

TABLE 2 - BASIC GROUP I PROSPECTIVE LOSS COST CHANGES
BY RATING GROUP AND TERRITORY (A)

RATING GROUP DESCRIPTION	Louisville	Lexington-Fayette
	INDICATED	INDICATED
01 APARTMENTS	+19.6%	+14.8%
02 OTHER HABITATIONAL	+14.4%	+9.9%
03 RESTAURANTS & BARS	+14.4%	+9.9%
04 OTHER MERCANTILE RISKS	+14.3%	+9.8%
05 PUBLIC BUILDINGS	+8.0%	+3.7%
06 CHURCHES	-3.4%	-7.2%
07 SCHOOLS	-0.1%	-4.1%
08 OFFICES AND BANKS	+2.8%	-1.2%
09 RECREATIONAL FACILITIES	+11.3%	+6.9%
10 HOTELS & MOTELS	+7.3%	+3.1%
11 HOSPITALS & NURSING HOMES	+8.2%	+3.9%
12 BLDGS UNDER CONSTRUCTION	+9.5%	+5.2%
13 MOTOR VEHICLE RISKS	+10.5%	+6.1%
14 OTHER NON-MANUFACTURING	+7.3%	+3.1%
15 STORAGE	+12.7%	+8.2%
17 FOOD MANUFACTURING	+8.5%	+4.2%
18 WOOD MANUFACTURING	+8.1%	+3.8%
19 WEARING APPAREL	+6.8%	+2.5%
20 CHEMICAL MANUFACTURING	+9.1%	+4.8%
21 METAL MANUFACTURING	+4.7%	+0.5%
22 OTHER MANUFACTURING	+6.8%	+2.5%
TOTAL	+11.7%	+6.9%

(A) FOR EACH RATING GROUP, THE LOSS COST CHANGE FOR EACH CSP CLASS IN THE RATING GROUP, BY COVERAGE AND CONSTRUCTION, IS IDENTICAL TO THE OVERALL CHANGE SHOWN FOR THE RATING GROUP.

KENTUCKY

TABLE 2 - BASIC GROUP I PROSPECTIVE LOSS COST CHANGES
BY RATING GROUP AND TERRITORY (A)

RATING GROUP DESCRIPTION	Balance of State (Kentucky)

	INDICATED
01 APARTMENTS	+2.7%
02 OTHER HABITATIONAL	-1.7%
03 RESTAURANTS & BARS	-1.7%
04 OTHER MERCANTILE RISKS	-1.8%
05 PUBLIC BUILDINGS	-7.2%
06 CHURCHES	-17.0%
07 SCHOOLS	-14.2%
08 OFFICES AND BANKS	-11.7%
09 RECREATIONAL FACILITIES	-4.4%
10 HOTELS & MOTELS	-7.8%
11 HOSPITALS & NURSING HOMES	-7.1%
12 BLDGS UNDER CONSTRUCTION	-5.9%
13 MOTOR VEHICLE RISKS	-5.1%
14 OTHER NON-MANUFACTURING	-7.8%
15 STORAGE	-3.2%
17 FOOD MANUFACTURING	-6.8%
18 WOOD MANUFACTURING	-7.1%
19 WEARING APPAREL	-8.3%
20 CHEMICAL MANUFACTURING	-6.3%
21 METAL MANUFACTURING	-10.1%
22 OTHER MANUFACTURING	-8.3%
 TOTAL	 -6.2%

(A) FOR EACH RATING GROUP, THE LOSS COST CHANGE FOR EACH CSP CLASS IN THE RATING GROUP, BY COVERAGE AND CONSTRUCTION, IS IDENTICAL TO THE OVERALL CHANGE SHOWN FOR THE RATING GROUP.

KENTUCKY

TABLE 3 - SPECIAL CAUSES OF LOSS PROSPECTIVE LOSS COST CHANGES BY CATEGORY

CATEGORY DESCRIPTION	ENTIRE STATE
-----	-----
01 BUILDINGS	-1.5%
02 RES. APTS. AND CONDOS	+0.0%
03 OFFICES	+2.9%
04 MERCANTILE - HIGH	+2.2%
05 MERCANTILE - MEDIUM	+1.6%
06 MERCANTILE - LOW	+0.4%
07 MOTELS AND HOTELS	-0.3%
08 INSTITUTIONAL - HIGH	+22.6%
09 INSTITUTIONAL - LOW	-3.0%
10 INDUST-PROC - HIGH	+0.0%
11 INDUST-PROC - LOW	-4.2%
12 SERVICE - HIGH	-8.9%
13 SERVICE - LOW	-2.9%
14 CONTRACTORS	+2.6%
STATEWIDE TOTAL	+0.5%

KENTUCKY
TABLE 4

POTENTIAL IMPACT OF BG I, BG II, AND SCL MONOLINE REVISIONS
ON COMMERCIAL PACKAGE POLICY

(1)	(2)	(3)	(4)	
TYPE OF POLICY	BASIC GROUP I	BASIC GROUP II	SPECIAL CAUSES OF LOSS	
31	MOTEL/HOTEL	-6.4%	+2.4%	-1.3%
32	APARTMENT	+6.0%	+2.4%	-1.4%
33	OFFICE	-8.4%	+2.4%	-0.2%
34	MERCANTILE	+0.4%	+2.4%	-0.4%
35	INSTITUTIONAL	-13.0%	+2.4%	+7.4%
36	SERVICES	-2.9%	+2.4%	-3.2%
37	INDUST/PROCESSING	-5.9%	+2.4%	-2.4%
38	CONTRACTORS	-1.7%	+2.4%	+0.6%

BASIC GROUP I, BASIC GROUP II, AND SPECIAL CAUSES OF LOSS MONOLINE CHANGES BY TYPE OF POLICY (TOP) ARE DISPLAYED. THEY ARE CALCULATED BY TAKING A WEIGHTED AVERAGE OF THE LOSS COST CHANGES BY TERRITORY (WHERE APPLICABLE) AND RATING GROUP (FOR BG I), OR BY CATEGORY (FOR SCL), USING THE LATEST YEAR MULTILINE AGGREGATE LOSS COSTS AS WEIGHTS. BASIC GROUP II MONOLINE CHANGES DO NOT VARY BY TOP BECAUSE THE SAME MONOLINE LOSS COST CHANGE IS APPLIED STATEWIDE.

KENTUCKY
COMMERCIAL PROPERTY INSURANCE

SECTION B - CALCULATION OF PROPOSED CHANGES

Overview of Actuarial Procedures - Commercial Property	B2
Calculation of Statewide Prospective Loss Cost Level Changes (Tables 5 - 7)	B3-11
Distribution of Prospective Loss Cost Level Changes (Tables 8 - 12)	B12-45

OVERVIEW OF ISO ACTUARIAL PROCEDURES - COMMERCIAL PROPERTY

INTRODUCTION

Commercial Property prospective loss costs are determined by evaluating the adequacy of the current ISO loss costs to pay for our best estimate of losses and all loss adjustment expenses that will be incurred in the prospective (or future) period. This evaluation is done separately for Basic Group I, Basic Group II, and Special Causes of Loss.

STEP 1: DETERMINATION OF INDICATED STATEWIDE LOSS COST LEVEL CHANGE

The first step in this process is the determination of the indicated statewide loss cost level change. This indicated statewide loss cost level change is the average percentage change which must be made to the current ISO loss costs in order to achieve adequacy for the prospective conditions. The percentage changes are presented on the exhibits labeled "Statewide Coverage Loss Cost Level Evaluation".

STEP 2: DISTRIBUTION OF CHANGES

Based on the experience, ISO then distributes the indicated statewide loss cost level change by territory (where applicable), type of policy and rating group for Basic Group I; by type of policy for Basic Group II; and by type of policy and category for Special Causes of Loss.

STEP 3: CALCULATION OF REVISED LOSS COSTS

The last step is the calculation of the prospective ISO loss costs. This is achieved by applying the indicated monoline changes to the current ISO loss costs. For Basic Group I, for those states without BG I rating territories, the statewide loss cost changes by rating group are applied to the current manual loss costs. For those states with rating territories, the Balance of State loss cost changes by rating group are applied to the current manual loss costs. The revised territory multipliers are calculated by multiplying the current territory multipliers by the indicated territory changes. For specifically-rated properties, the appropriate changes are applied to the current experience level adjustment factors and territory multipliers. For Basic Group II, revised loss costs are calculated by applying the indicated statewide monoline change to the current ISO loss costs, and where applicable, adding the hurricane modeled loss costs. For Special Causes of Loss, revised loss costs are calculated by applying the indicated monoline changes by category to the current ISO loss costs.

COMMERCIAL PROPERTY INSURANCE
CALCULATION OF STATEWIDE ADVISORY LOSS COST LEVEL CHANGES IN TABLES 5, 6 AND 7

OBJECTIVE	The objective of this procedure is to determine the indicated statewide advisory loss cost level change. This procedure answers the question: What average percentage change must be made to the current ISO loss costs in order for them to be adequate to cover indemnity losses and all loss adjustment expenses incurred in the prospective period in which the revised loss costs are assumed to be in effect?
DESCRIPTION	<p>This procedure compares the trended and developed incurred losses and loss adjustment expenses with the trended aggregate loss costs at current ISO level. The aggregate loss costs at current level are the amounts that would have been collected for losses and all loss adjustment expenses if the current ISO loss costs had been in effect during the experience period.</p> <p>Experience ratios (losses and all loss adjustment expenses divided by aggregate loss costs, both trended to the prospective experience period) are calculated by year, and a weighted average of the yearly experience ratios is calculated. For Basic Group I (BG I) and Special Causes of Loss (SCL), the five year weights vary by year, giving greater weight to the more recent experience. For Basic Group II (BG II), because of the more volatile nature of the data, the ten individual years are given equal weight.</p> <p>The average experience ratio is then credibility-weighted with the expected experience ratio in order to minimize the impact of random variation in the observed losses. The resulting credibility-weighted experience ratio is the indicated statewide advisory loss cost level change in decimal form.</p>
EXPERIENCE BASE	The experience used in this review is the latest available data reported under the ISO Commercial Statistical Plan for BG I, BG II and SCL. The data are aggregated on an accident year basis.

KENTUCKY
TABLE 5

STATEWIDE BASIC GROUP I
COVERAGE LOSS COST LEVEL EVALUATION

(1)	(2)	(3)	(4)	(5)
YEAR	AGGREGATE* LOSS COSTS	ADJUSTED** INCURRED LOSSES	EXPERIENCE RATIO (3) / (2)	WEIGHTS
2014	28,752,145	20,421,980	0.710	0.10
2015	28,806,737	21,381,276	0.742	0.15
2016	28,211,537	16,884,345	0.598	0.20
2017	27,760,942	25,967,734	0.935	0.25
2018	28,947,750	21,572,848	0.745	0.30

(6) WEIGHTED EXPERIENCE RATIO	= 0.760
(7) CREDIBILITY	= 0.334
(8) EXPECTED EXPERIENCE RATIO	= 1.009
(9) CREDIBILITY WEIGHTED EXPERIENCE RATIO (0.334 X 0.760) + (0.666 X 1.009)	= 0.926
(10) INDICATED COVERAGE LOSS COST CHANGE	= 0.926
	OR -7.4%

* AGGREGATE LOSS COSTS ARE ADJUSTED TO CURRENT ISO LOSS COST LEVEL AND 07/01/2020 AMOUNT OF INSURANCE LEVELS.

** INCURRED LOSSES ARE ADJUSTED TO 01/01/2021 COST LEVELS INCLUDING LOSS DEVELOPMENT AND ALL LOSS ADJUSTMENT EXPENSES.

KENTUCKY
TABLE 6

STATEWIDE BASIC GROUP II
COVERAGE LOSS COST LEVEL EVALUATION

(1)	(2)	(3)	(4)
YEAR	AGGREGATE* LOSS COSTS	ADJUSTED** INCURRED LOSSES	EXPERIENCE RATIO (3) / (2)
2009	21,308,932	30,091,288	1.412
2010	21,812,717	12,377,907	0.567
2011	20,269,165	24,894,013	1.228
2012	20,357,444	24,942,317	1.225
2013	20,227,442	16,307,606	0.806
2014	20,109,922	13,979,806	0.695
2015	20,195,967	20,982,899	1.039
2016	19,451,889	18,104,521	0.931
2017	19,250,599	28,867,687	1.500
2018	20,682,342	11,005,210	0.532

(5) WEIGHTED EXPERIENCE RATIO (EQUAL WEIGHTS)	= 0.995
(6) CREDIBILITY	= 0.478
(7) EXPECTED EXPERIENCE RATIO	= 1.014
(8) CREDIBILITY WEIGHTED EXPERIENCE RATIO (0.478 x 0.995) + (0.522 x 1.014)	= 1.005
(9) INDICATED COVERAGE LOSS COST CHANGE	= 1.005
	OR +0.5%

* AGGREGATE LOSS COSTS ARE ADJUSTED TO CURRENT ISO LOSS COST LEVEL AND 07/01/2020 AMOUNT OF INSURANCE LEVELS.

** INCURRED LOSSES ARE ADJUSTED TO 01/01/2021 COST LEVELS INCLUDING LOSS DEVELOPMENT AND ALL LOSS ADJUSTMENT EXPENSES.

KENTUCKY
TABLE 7

STATEWIDE SPECIAL CAUSES OF LOSS
COVERAGE LOSS COST LEVEL EVALUATION

(1)	(2)	(3)	(4)	(5)
YEAR	AGGREGATE* LOSS COSTS	ADJUSTED** INCURRED LOSSES	EXPERIENCE RATIO (3) / (2)	WEIGHTS
2014	15,892,119	18,477,175	1.163	0.10
2015	15,600,999	27,008,325	1.731	0.15
2016	15,057,265	9,825,937	0.653	0.20
2017	14,618,321	10,397,899	0.711	0.25
2018	15,138,749	13,638,916	0.901	0.30

(6) WEIGHTED EXPERIENCE RATIO = 0.955

(7) CREDIBILITY = 0.328

(8) EXPECTED EXPERIENCE RATIO = 1.012

(9) CREDIBILITY WEIGHTED EXPERIENCE RATIO
(0.328 X 0.955) + (0.672 X 1.012) = 0.993

(10) INDICATED COVERAGE LOSS COST CHANGE = 0.993

OR -0.7%

* AGGREGATE LOSS COSTS ARE ADJUSTED TO CURRENT ISO LOSS COST LEVEL AND 07/01/2020 AMOUNT OF INSURANCE LEVELS.

** INCURRED LOSSES ARE ADJUSTED TO 01/01/2021 COST LEVELS INCLUDING LOSS DEVELOPMENT AND ALL LOSS ADJUSTMENT EXPENSES.

EXPLANATORY NOTES TO TABLES 5, 6 AND 7

STATEWIDE BASIC GROUP I, BASIC GROUP II AND
SPECIAL CAUSES OF LOSS COVERAGE LOSS COST LEVEL EVALUATION

COLUMN (1)

EXPERIENCE PERIOD

Experience for the five most recent accident years is used for BG I and SCL.
Experience for the ten most recent accident years is used for BG II.

COLUMN (2)

AGGREGATE LOSS COSTS

Since the objective of the ratemaking procedure is to test the adequacy of the current ISO loss costs, premium data for each year in the experience period are adjusted to the loss cost level which would have been earned had the current loss costs been in effect. This is accomplished by using either an extension-of-exposures (PPR or premium at present rates/loss costs) approach or an on-level approach. Where appropriate, certain reported data elements have been adjusted prior to being used in the calculations.

Extension of Exposures Approach

Where feasible, aggregate loss costs at current level (ALCCL) are developed using an extension-of-exposures approach. That is, the exposure (amount of insurance per \$100) for each policy is multiplied by the current manual loss cost for that state, territory, subline, coverage, construction, occupancy and by any other applicable rating factors, such as limit of insurance factors and deductible relativities.

On-Level Approach

The on-level approach is applied on an individual policy basis. The first step in the process is to multiply the reported premiums by the product of all loss cost level changes that have become effective subsequent to the inception date of the policy. The premiums are divided by the reported Rating Modification Factors and Loss Cost Multipliers to bring them to current ISO monoline manual loss cost level.

For premium records with inception dates prior to the effective date of the implementation of Limit of Insurance (LOI) curves, premiums are multiplied by off-balance factors and limit of insurance factors to bring them to a post-LOI loss cost level.

The on-level approach is used to adjust those premium records which cannot be adjusted using the extension-of-exposures techniques, for example, premium records for Basic Group I specifically-rated properties, for which manual loss costs do not exist. In addition, records failing an exposure edit which checks for a reasonable relationship between reported premium and exposure amount have also been on-leveled.

STATEWIDE BASIC GROUP I, BASIC GROUP II AND
SPECIAL CAUSES OF LOSS COVERAGE LOSS COST LEVEL EVALUATION (cont'd)

COLUMN (2)
(cont'd)

Current IPMF and Prospective Amount of Insurance Levels

Premiums are also adjusted to prospective amount of insurance levels by exposure trend factors to reflect the impact of inflation on the average amount of insurance written (Table 24). After multiline premiums are brought to current ISO monoline manual level, they are further adjusted to implicit package modification factor (IPMF) level by the application of Commercial Package Policy (CPP) IPMF's which vary by the eight CPP types of policy. (Both the adjustments to prospective amount of insurance level and to current IPMF level are done on an aggregate basis.) For a more complete description of the IPMF's and the other premium adjustments, refer to Tables 18 through 20 in the supporting material.

COLUMN (3)

ADJUSTED INCURRED LOSSES

In order to assure the adequacy of the proposed loss cost level, incurred losses are adjusted to reflect the effect of inflation and other trends on loss costs. The adjustment of past losses to prospective levels is accomplished on an individual loss basis by application of current cost factors, loss projection factors and loss trend adjustments (Tables 21 through 23). In addition to adjusting losses to prospective cost level, the effect of inflation on the deductible portion of the loss incurred is reflected.

For each subline, incurred losses are further adjusted by an excess loss procedure which smoothes fluctuations due to large loss occurrences. The procedure removes any losses determined to be excess from the total incurred losses, resulting in normal incurred losses. These normal incurred losses (total - excess) are then multiplied by excess loss factors to calculate adjusted incurred losses (Tables 29 through 32). The resulting adjusted incurred losses are then developed to their ultimate settlement value and loaded by a factor to include all loss adjustment expenses. Loss development factors can be found on Table 28, and loss adjustment expense factors on Table 41. Where appropriate, certain reported data elements have been adjusted prior to being used in the calculations.

COLUMN (4)

EXPERIENCE RATIO

The experience ratio is the ratio of adjusted incurred losses to aggregate loss costs for each year.

STATEWIDE BASIC GROUP I, BASIC GROUP II AND
SPECIAL CAUSES OF LOSS COVERAGE LOSS COST LEVEL EVALUATION (cont'd)

COLUMN (5) - BG I, SCL WEIGHTS

For Basic Group I and Special Causes of Loss, the yearly experience ratios are weighted using weights of 10%, 15%, 20%, 25%, and 30% with the greatest weight assigned to the most recent year. These weights recognize the need to balance stability and responsiveness. The ten Basic Group II experience ratios are equally weighted, each given 10% weight.

LINE (6) - BG I, SCL WEIGHTED EXPERIENCE RATIO
LINE (5) - BG II

For Basic Group I and Special Causes of Loss, the weights are applied to the experience ratios to yield the weighted experience ratio. For Basic Group II, the experience ratios are equally weighted. These weighted experience ratios represent a projection of the experience which would result if future policies were written without a loss cost level revision.

LINE (7) - BG I, SCL CREDIBILITY
LINE (6) - BG II

The standards for 100% credibility are discussed in detail in Tables 33, 33A, and 34 for Basic Group I, Basic Group II, and Special Causes of Loss, respectively.

LINE (8) - BG I, SCL EXPECTED EXPERIENCE RATIO
LINE (7) - BG II

The expected experience ratio is ISO's best prediction of the experience ratio if the actual incurred experience were not available. For this review, we have assumed that the current loss costs were adequate when implemented and will be inadequate for the prospective period only to the extent of the net trend. The expected experience ratio is represented by the net (loss/amount of insurance) trend factor.

LINE (9) - BG I, SCL CREDIBILITY WEIGHTED EXPERIENCE RATIO
LINE (8) - BG II

The credibility weighted experience ratio is a weighted average of the weighted experience ratio (line (6) for BG I and SCL; line (5) for BG II) and the expected experience ratio (line (8) for BG I and SCL; line (7) for BG II) using the credibility factor and its complement as respective weights. For more detailed information regarding the development of the credibility factors, refer to Tables 33, 33A, and 34.

LINE (10) - BG I, SCL INDICATED COVERAGE LOSS COST CHANGE
LINE (9) - BG II

The credibility weighted experience ratio yields the overall coverage loss cost level change for Basic Group I (see Table 5), Basic Group II (see Table 6), and Special Causes of Loss (see Table 7).

COMPOSITION OF THE RATEMAKING DATA BASE

DATA INCLUDED

BASIC GROUP I

- . CSP Subline 010 (Commercial Fire)
- . CSP Subline 015 (Basic Group I, i.e., Fire, Lightning, Explosion, Vandalism, Sprinkler Leakage)
- . CSP Subline 016 (BG I excluding Vandalism)
- . CSP Subline 017 (BG I excluding Sprinkler Leakage)
- . CSP Subline 018 (BG I excluding Vandalism and Sprinkler Leakage)

BASIC GROUP II

- . CSP Subline 020 (Extended Coverage)
- . CSP Subline 025 (Basic Group II, i.e., Windstorm or Hail, Smoke, Aircraft or Vehicles, Riot or Civil Commotion, Sinkhole Collapse and Volcanic Action)
- . CSP Subline 027 (Basic Group II Causes of Loss, i.e., Windstorm or Hail, Smoke, Aircraft or Vehicles, Riot or Civil Commotion, Sinkhole Collapse and Volcanic Action)
- . CSP Subline 029 (Basic Group II Causes of Loss excluding Windstorm or Hail)

SPECIAL CAUSES OF LOSS

- . CSP Subline 028 (All Other Perils Special Coverage Forms & Endorsements)
- . CSP Subline 035 (Causes of Loss Special Form Including Theft)
- . CSP Subline 045 (Causes of Loss Special Form Excluding Theft)

NOTES ON DATA INCLUDED

All CSP data are reviewed for CSP Types of Policy 10 (monoline), 3X, 70, and 7X (multiline).

For BG I, BG II and SCL, the reviewed experience is for property damage and time element coverages (coverage codes 1-7, as well as coverage code 9 reported under pre-simplification sublines 010, 020, and 028).

COMPOSITION OF THE RATEMAKING DATA BASE (cont'd)

<u>DATA EXCLUDED</u>	<u>TYPE OF DATA</u>	<u>BG I</u>	<u>BG II</u>	<u>SCL</u>
	• Non-voluntary experience (e.g. FAIR Plans)	X	X	NA
	• Dwelling experience	X	X	X
	• Farm experience	X	X	NA
	• Countrywide rated risks	X	X	X
	• Highly protected risks	X	X	X
	• Experience for policies with large deductibles	X	X	X

X indicates that experience is excluded.

Separately identifiable terrorism premium and loss records have been excluded from the ratemaking experience.

OVERVIEW OF ISO ACTUARIAL PROCEDURES - COMMERCIAL PROPERTY

STEP 2 - DISTRIBUTION OF LOSS COST LEVEL CHANGES

OBJECTIVE The objective of this procedure is to distribute the indicated statewide loss cost level change for Basic Group I, Basic Group II, and Special Causes of Loss among the various rating variables used in each subline. These procedures are used to answer the question: What percentage change for each rating variable must be made to the current ISO loss costs in order to achieve adequacy for the prospective conditions?

BASIC GROUP I For Basic Group I, a consolidated simultaneous iterative procedure is used to calculate the type of policy, territory and rating group relativities. More detail on this procedure is given in Table 8. The type of policy relativities serve to price Commercial Package policies relative to monoline policies, via the Package Modification Factors (PMF), while the rating group and territory relativities serve to price the various rating groups and territories relative to one another.

The indicated monoline loss cost level changes shown on Table 2 are calculated for each rating group/territory combination by taking the product of the monoline type of policy relativity, the rating group relativity, the territory relativity and the statewide loss cost level change.

The overall monoline loss cost level change is a weighted average of the rating group/territory combination changes. In calculating this weighted average, the latest year aggregate monoline and multiline combined loss costs at current level are used as weights.

BASIC GROUP II The purpose of the Basic Group II relativity analysis is to determine monoline loss cost level needs, to obtain marginal relativities displayed on Table 12 and to price CPP policies relative to monoline policies via the PMFs. Unlike the BG I and SCL relativity analyses, the BG II relativity analysis does not employ a simultaneous review procedure because the overall loss cost change is distributed across type of policy only. The indicated statewide monoline change is the product of the monoline type of policy relativity times the statewide loss cost level change.

OVERVIEW OF ISO ACTUARIAL PROCEDURES - COMMERCIAL PROPERTY

STEP 2 - DISTRIBUTION OF LOSS COST LEVEL CHANGES (cont'd)

SPECIAL CAUSES
OF LOSS

For Special Causes of Loss, a simultaneous iterative procedure is used as for BG I to arrive at a set of type of policy and category relativities (as displayed on Table 9) that best represent the experience within each state. The type of policy relativities serve to price CPP policies relative to monoline policies via the PMFs, while the category relativities serve to price the various categories relative to one another.

The indicated monoline loss cost level changes are calculated for each category by taking the product of the monoline type of policy relativity, the category relativity and the statewide coverage loss cost change. See Table 9 for the monoline loss cost indications.

The overall monoline loss cost level change is a weighted average of the 14 monoline category changes. In calculating this weighted average, the latest year monoline and multiline combined loss costs at current level are used as weights.

KENTUCKY

TABLE 8 - BASIC GROUP I RELATIVITY ANALYSIS

	(1) \$ LST SQ FORMULA RELATIVITY	(2) CREDIBILITY Z	(3) Z-WTD. RELATIVITY	(4) BALANCED RELATIVITY	STATEWIDE COVERAGE LOSS COST CHANGE OF 0.926 OR -7.4%
TOP					
10	1.368	0.103	1.033	1.042	
31	1.541	0.034	1.015	1.024	
32	0.709	0.162	0.946	0.954	
33	1.186	0.062	1.011	1.020	
34	0.819	0.264	0.949	0.957	
35	1.396	0.217	1.075	1.085	
36	0.821	0.154	0.970	0.979	
37	1.090	0.109	1.009	1.019	
38	0.663	0.070	0.972	0.981	

RATING GROUP	(1)	(2)	(3)	(4)	(5) INDICATED MONOLINE LOSS COST LEVEL CHANGE
01	1.410	0.258	1.093	1.092	+7.9
02	1.369	0.141	1.045	1.045	+1.9
03	1.371	0.141	1.045	1.045	+1.6
04	1.094	0.483	1.044	1.044	+0.9
05	0.678	0.036	0.986	0.986	-6.7
06	0.556	0.213	0.882	0.882	-16.0
07	0.687	0.244	0.912	0.912	-13.3
08	0.789	0.264	0.939	0.939	-8.9
09	1.171	0.101	1.016	1.016	-2.2
10	0.793	0.086	0.980	0.980	-6.4
11	0.655	0.027	0.989	0.988	-4.1
12	1.033	0.007	1.000	1.000	-2.6
13	1.057	0.167	1.009	1.009	-3.0
14	0.843	0.115	0.981	0.980	-6.0
15	1.295	0.111	1.029	1.029	-1.0
17	0.737	0.027	0.992	0.991	-4.4
18	0.714	0.038	0.987	0.987	-5.4
20	0.654	0.009	0.996	0.996	-4.1
21	0.654	0.106	0.956	0.956	-8.6
22	0.693	0.067	0.976	0.975	-5.6

STATEWIDE MONOLINE LOSS COST LEVEL CHANGE -3.3%

KENTUCKY

TABLE 8 - BASIC GROUP I RELATIVITY ANALYSIS

TERRITORY	(1) \$ LST SQ FORMULA RELATIVITY	(2) CREDIBILITY Z	(3) Z-WTD. RELATIVITY	(4) BALANCED RELATIVITY
Louisville	1.475	0.217	1.088	1.135
Lexington-Fayette	1.344	0.149	1.045	1.090
Balance of State (Kentucky)	0.906	0.681	0.935	0.975

TERRITORY	(5) INDICATED MONOLINE LOSS COST LEVEL CHANGE
Louisville	+11.7
Lexington-Fayette	+6.9
Balance of State (Kentucky)	-6.2

LOSS COST CHANGES BY INDIVIDUAL TERRITORY AND RATING GROUP ARE SHOWN ON TABLE 2.

KENTUCKY

TABLE 8 - BASIC GROUP I RELATIVITY ANALYSIS

EXAMPLE OF AN INDIVIDUAL LOSS COST CHANGE CALCULATION
FOR Louisville

STATEWIDE COVERAGE LOSS COST LEVEL CHANGE	=	-7.4%
TERRITORIAL RELATIVITY	=	1.135
MONOLINE (TOP 10) RELATIVITY	=	1.042
RATING GROUP 01 RELATIVITY	=	1.092

INDICATED MONOLINE LOSS COST LEVEL CHANGE FOR RATING GROUP 01

$$= 0.926 \quad \times \quad 1.135 \quad \times \quad 1.042 \quad \times \quad 1.092 \quad = \quad 1.196$$

OR +19.6%

KENTUCKY

TABLE 8 - CALCULATION OF INDICATED TERRITORIAL MULTIPLIERS

(1) TERRITORY	(2) TERRITORY RELATIVITY	(3) OFF- BALANCE FACTOR	(4) CURRENT TERRITORIAL MULTIPLIER
Louisville	1.135	1.000	0.685
Lexington-Fayette	1.090	1.000	0.750
Balance of State (Kentucky)	0.975	1.000	1.000

(5) INDICATED TERRITORIAL MULTIPLIER ((2) X (3) X (4) / (0.975 X 1.000))	
Louisville	0.797
Lexington-Fayette	0.838
Balance of State (Kentucky)	1.000

KENTUCKY

TABLE 9 - SPECIAL CAUSES OF LOSS RELATIVITY ANALYSIS

	(1)	(2)	(3)	(4)	STATEWIDE COVERAGE LOSS COST CHANGE OF 0.993 OR -0.7%
TOP	\$ LST SQ FORMULA RELATIVITY	CREDIBILITY Z	Z-WTD. RELATIVITY	BALANCED RELATIVITY	
10	0.971	0.141	0.996	1.013	
31	1.877	0.048	1.031	1.049	
32	0.528	0.207	0.876	0.892	
33	0.630	0.113	0.949	0.966	
34	0.664	0.307	0.882	0.897	
35	1.512	0.250	1.109	1.128	
36	1.556	0.220	1.102	1.122	
37	1.022	0.112	1.002	1.020	
38	0.893	0.105	0.988	1.006	
					(5) INDICATED MONOLINE LOSS COST LEVEL CHANGE
CATEGORY					
01	0.961	0.761	0.970	0.979	-1.5
02	0.833	0.086	0.984	0.994	+0.0
03	1.117	0.123	1.014	1.023	+2.9
04	1.028	0.213	1.006	1.016	+2.2
05	1.004	0.148	1.001	1.010	+1.6
06	0.868	0.078	0.989	0.998	+0.4
07	0.482	0.026	0.981	0.991	-0.3
08	1.925	0.288	1.208	1.219	+22.6
09	0.631	0.100	0.955	0.964	-3.0
10	0.566	0.028	0.984	0.994	+0.0
11	0.624	0.125	0.943	0.952	-4.2
12	0.505	0.159	0.897	0.906	-8.9
13	0.620	0.095	0.956	0.965	-2.9
14	1.091	0.123	1.011	1.020	+2.6
					OVERALL MONOLINE LOSS COST LEVEL CHANGE
					+0.5%

KENTUCKY

TABLE 9 - SPECIAL CAUSES OF LOSS RELATIVITY ANALYSIS

EXAMPLE OF A LOSS COST CHANGE CALCULATION

STATEWIDE COVERAGE LOSS COST LEVEL CHANGE = -0.7%
MONOLINE (TOP 10) RELATIVITY = 1.013
CATEGORY 01 RELATIVITY = 0.979

INDICATED MONOLINE LOSS COST LEVEL CHANGE FOR CATEGORY 01

= 0.993 X 1.013 X 0.979 = 0.985
OR -1.5%

EXPLANATORY NOTES TO TABLES 8 AND 9

BASIC GROUP I AND SPECIAL CAUSES OF LOSS RELATIVITY ANALYSIS

INTRODUCTION

The explanations which follow clarify Tables 8 and 9, the Basic Group I relativity analysis and the Special Causes of Loss relativity analysis, respectively. The purpose of these analyses is to:

- (1) determine monoline classification and territorial loss cost level needs for Basic Group I;
- (2) determine monoline category loss cost level needs for Special Causes of Loss;
- (3) determine indicated changes to the eight CPP package modification factors (PMFs) based on Basic Group I/Special Causes of Loss experience.

COLUMN (1)

LEAST SQUARES FORMULA RELATIVITIES

The least squares formula relativities are the marginal relativities which result from the application of the simultaneous review procedure to the raw experience (where marginal refers to the relativities for a given rating variable, e.g. type of policy, across all subsets of any other rating variables, i.e. rating group and territory for Basic Group I, and category for Special Causes of Loss).

The purpose of such a simultaneous review procedure is to arrive at a set of type of policy relativities (which will serve to price CPP policies relative to monoline policies via the PMFs); a set of rating group/territory relativities for Basic Group I; and a set of category relativities for Special Causes of Loss that best represent the experience. This procedure is in contrast to a review of each rating variable's experience separately. Such one-way types of review do not take into account differing percentages of monoline and multiline experience in each rating variable, nor differing percentages of a particular rating variable's experience in the monoline and multiline types of policy. The simultaneous relativity procedure accounts for these different distributions in generating relativities for the various rating variables.

EXPLANATORY NOTES TO TABLES 8 AND 9 (cont'd)

COLUMN (1)
(Cont'd)

The procedure follows an iterative technique to determine a set of marginal relativities by rating variable that is a best fit to the individual cell relativities, with each cell being defined as the cross-section of specific values of each rating variable. The process uses the relativity of the five year experience ratios by rating cell to the overall statewide experience ratio and the latest year aggregate loss costs for each rating cell. (This experience is shown in Table 10 for Basic Group I and Table 11 for Special Causes of Loss.) Specifically, the iteration procedure uses the following formulas:

BASIC GROUP I:

$$TOP_i = \frac{\sum_{j=1}^n \sum_{k=1}^t W_{ijk}^2 R_{ijk} RG_j TER_k}{\sum_{j=1}^n \sum_{k=1}^t W_{ijk}^2 RG_j^2 TER_k^2}, \quad \text{where } 1 \leq i \leq m;$$

$$RG_j = \frac{\sum_{i=1}^m \sum_{k=1}^t W_{ijk}^2 R_{ijk} TOP_i TER_k}{\sum_{i=1}^m \sum_{k=1}^t W_{ijk}^2 TOP_i^2 TER_k^2}, \quad \text{where } 1 \leq j \leq n;$$

$$TER_k = \frac{\sum_{i=1}^m \sum_{j=1}^n W_{ijk}^2 R_{ijk} TOP_i RG_j}{\sum_{i=1}^m \sum_{j=1}^n W_{ijk}^2 TOP_i^2 RG_j^2}, \quad \text{where } 1 \leq k \leq t;$$

SPECIAL CAUSES OF LOSS:

$$TOP_i = \frac{\sum_{j=1}^n w_{ij}^2 R_{ij} CAT_j}{\sum_{j=1}^n w_{ij}^2 CAT_j^2}, \quad \text{where } 1 \leq i \leq m;$$

$$CAT_j = \frac{\sum_{i=1}^m w_{ij}^2 R_{ij} TOP_i}{\sum_{i=1}^m w_{ij}^2 TOP_i^2}, \quad \text{where } 1 \leq j \leq n;$$

EXPLANATORY NOTES TO TABLES 8 AND 9 (cont'd)

COLUMN (1)
(cont'd)

- TOP_i is the relativity for the i th type of policy;
- RG_j is the relativity for the j th rating group;
- CAT_j is the relativity for the j th category;
- TER_k is the relativity for the k th territory;
- W_{ijk} is the loss cost volume at current level for the i th type of policy, j th rating group and k th territory;
- R_{ijk} is the experience ratio relativity for the i th type of policy, j th rating group and k th territory;
- R_{ij} is the experience ratio relativity for the i th type of policy, and j th category;
- m is the number of types of policy in the analysis;
- n is the number of rating groups or categories in the analysis;
- t is the number of territories in the analysis.

The procedure determines m type of policy relativities using the above formulas. Then, using those results, a set of n rating group and t territory relativities are determined. These steps form an iterative process which continues until there is no appreciable difference in results from one iteration to the next.

COLUMN (2)

CREDIBILITY

The credibility of the experience for each rating variable is determined from the formula:

$$Z = \frac{P}{P + K},$$

where P represents the five-year aggregate adjusted loss costs for a given rating variable, and K is a constant value. For Basic Group I, K equals an aggregate loss cost volume of \$55,000,000 for territory, \$40,000,000 for rating group, and \$100,000,000 for type of policy. For Special Causes of Loss, K equals an aggregate loss cost volume of \$15,000,000.

EXPLANATORY NOTES TO TABLES 8 AND 9 (cont'd)

COLUMN (3)

CREDIBILITY-WEIGHTED RELATIVITIES

Credibility-weighted relativities are calculated based on the formula

$$W = R^Z,$$

where Z is the credibility, R is the least squares formula relativity and W is the credibility weighted relativity for a given rating variable.

This formula implicitly assigns the complement of credibility to a relativity of unity.

COLUMN (4)

BALANCED RELATIVITIES

The credibility-weighted relativities are balanced to assure that the average relativity across all rating variables remains at unity.

COLUMN (5)

INDICATED MONOLINE LOSS COST LEVEL CHANGE

For Basic Group I, the indicated monoline loss cost changes are calculated for each rating group and territory by taking the product of the monoline type of policy (TOP 10) relativity, the territory relativity, the rating group relativity and the statewide loss cost level change. (An example of such a calculation appears on Table 8.)

The indicated monoline loss cost changes by rating group shown in Table 8 of this analysis are the aggregate loss cost weighted averages of the monoline loss cost changes for the rating group across all territories.

EXPLANATORY NOTES TO TABLES 8 AND 9 (cont'd)

COLUMN (5)
(cont'd)

Similarly, the indicated monoline loss cost changes by territory shown on the second page are aggregate loss cost-weighted averages of the monoline loss cost changes for the territory across all rating groups. The indicated overall statewide monoline loss cost level change shown at the bottom of the first page of Table 8 is the aggregate loss cost-weighted average of the individual rating group changes across all territories.

For Special Causes of Loss, the indicated monoline loss cost changes are calculated for each category by taking the product of the monoline type of policy (TOP 10) relativity, the category relativity, and the statewide loss cost level change. (An example of such a calculation is included in Table 9.) The indicated overall statewide loss cost level change shown at the bottom of Table 9 is the aggregate loss cost-weighted average of the individual category changes.

In all cases, the loss costs used in these calculations are the latest year's monoline and multiline combined adjusted loss costs.

MULTILINE
CONSIDERATIONS

The type of policy (TOP) relativities are used to generate multiline indications which apply to the current implicit package modification factors (IPMF's). The indicated IPMF's are calculated as follows:

$$\frac{\text{TOP y indicated IPMF}}{\text{IPMF}} = \frac{(\text{TOP y current IPMF})(\text{TOP y relativity})}{\text{monoline relativity}}$$

For each CPP type of policy, the indicated IPMF is subject to a minimum value of 0.50 and a maximum value of 1.50. If an indicated IPMF falls outside one of those limits, it is capped at that amount, the loss costs for that type of policy are adjusted to the capped IPMF level, and the entire relativity review as described above is re-performed to take this into account. If an IPMF has been capped, it is so noted at the bottom of Table 8 and Table 9.

It should be noted that although this procedure generates multiline indications, this filing only addresses monoline loss cost levels. That is, upon implementation of this filing only the monoline loss costs will be revised. The multiline indications developed here will be combined with those of the other component coverages, e.g. GL Premises and Operations in the CPP review for the purpose of revising the package modification factors.

Louisville

KENTUCKY
BASIC GROUP I RELATIVITY ANALYSIS
TABLE 10 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 06/30/18 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) Z-WEIGHTED EXPERIENCE RATIO	(5) Z-WEIGHTED RELATIVITY
10 MONOLINE	01 APARTMENTS	4,350	84,280	0.025	0.340	0.469
	02 OTHER HABITATIONAL	4,517	87,942	2.782	1.231	1.698
	03 RESTAURANTS & BARS	4,402	20,907	0.000	0.390	0.538
	04 OTHER MERCANTILE RS	43,557	292,215	0.347	0.411	0.567
	05 PUBLIC BUILDINGS	10	2,786	0.000	0.411	0.567
	06 CHURCHES	1,588	15,655	2.633	0.889	1.226
	07 SCHOOLS	660	5,833	0.000	0.407	0.561
	08 OFFICES AND BANKS	24,717	153,572	0.438	0.467	0.644
	09 REC. FACILITIES	3,968	61,489	0.000	0.351	0.484
	10 HOTELS AND MOTELS	815	6,465	0.000	0.406	0.560
	11 HOSPITALS/NURS HOME	1,103	4,266	0.000	0.409	0.564
	12 BLDGS UNDER CONST.	1,695	3,440	0.000	0.410	0.566
	13 MOTOR VEHICLE RISKS	8,907	43,868	0.000	0.367	0.506
	14 OTHER NON-MANUF.	5,959	38,256	0.000	0.372	0.513
	15 STORAGE	11,211	56,235	0.000	0.356	0.491
	17 FOOD MANUFACTURING	0	376	0.000	0.414	0.571
	18 WOOD MANUFACTURING	1,264	5,316	0.000	0.408	0.563
	20 CHEM. MANUFACTURING	868	956	0.000	0.413	0.570
	21 METAL MANUFACTURING	5,534	45,231	0.000	0.366	0.505
	22 OTHER MANUFACTURING	3,145	8,137	0.000	0.405	0.559
	TOTAL*	128,270	937,225	0.334	0.440	0.607
31 MULTILINE MOTEL/HOTEL	10 HOTELS AND MOTELS	41,882	246,796	13.809	3.219	4.440
	TOTAL*	41,882	246,796	13.809	3.219	4.440
32 MULTILINE APARTMENT	01 APARTMENTS	563,847	2,855,165	0.545	1.097	1.513
	02 OTHER HABITATIONAL	187,056	797,159	0.420	1.084	1.495
	TOTAL*	750,903	3,652,324	0.514	1.094	1.509
33 MULTILINE OFFICE	08 OFFICES AND BANKS	221,574	1,016,041	0.986	1.176	1.622
	TOTAL*	221,574	1,016,041	0.986	1.176	1.622
34 MULTILINE MERCANTILE	03 RESTAURANTS & BARS	153,244	623,484	1.856	1.316	1.815
	04 OTHER MERCANTILE RS	627,903	3,068,501	0.799	1.140	1.572
	08 OFFICES AND BANKS	49,344	196,660	1.083	1.192	1.644
	13 MOTOR VEHICLE RISKS	44,596	137,862	0.132	1.041	1.436
	14 OTHER NON-MANUF.	25,544	90,245	0.756	1.140	1.572
	15 STORAGE	60,402	300,659	0.012	1.021	1.408
	TOTAL*	961,033	4,417,411	0.901	1.159	1.598

Louisville

KENTUCKY
 BASIC GROUP I RELATIVITY ANALYSIS
 TABLE 10 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 06/30/18 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) Z-WEIGHTED EXPERIENCE RATIO	(5) Z-WEIGHTED RELATIVITY
35 MULTILINE INSTITUTIONAL	02 OTHER HABITATIONAL	5,789	16,048	2.266	1.379	1.902
	05 PUBLIC BUILDINGS	3,250	41,622	0.218	1.055	1.455
	06 CHURCHES	85,100	580,578	0.421	1.085	1.497
	07 SCHOOLS	69,319	339,958	6.052	1.986	2.739
	08 OFFICES AND BANKS	27,384	118,290	0.340	1.074	1.481
	09 REC. FACILITIES	1,705	19,811	0.286	1.066	1.470
	11 HOSPITALS/NURS HOME	37,682	123,659	2.040	1.344	1.854
	13 MOTOR VEHICLE RISKS	624	4,447	0.000	1.021	1.408
	14 OTHER NON-MANUF.	4,772	28,023	0.000	1.021	1.408
	TOTAL*	235,625	1,272,436	2.359	1.395	1.925
36 MULTILINE SERVICES	03 RESTAURANTS & BARS	10,283	22,504	0.022	0.421	0.581
	04 OTHER MERCANTILE RS	50,940	226,715	0.216	0.360	0.497
	08 OFFICES AND BANKS	30,616	153,785	0.033	0.302	0.417
	09 REC. FACILITIES	78,019	328,529	0.134	0.285	0.393
	13 MOTOR VEHICLE RISKS	114,562	499,143	0.704	0.649	0.895
	14 OTHER NON-MANUF.	40,394	181,648	0.321	0.425	0.586
	15 STORAGE	30,433	119,408	0.000	0.313	0.432
	21 METAL MANUFACTURING	1,969	10,511	0.000	0.434	0.599
	22 OTHER MANUFACTURING	6,989	42,260	0.216	0.445	0.614
	TOTAL*	364,205	1,584,503	0.324	0.437	0.603
37 MULTILINE INDUST/PROCESS	04 OTHER MERCANTILE RS	41,410	188,699	0.000	0.266	0.367
	08 OFFICES AND BANKS	15,745	72,002	0.036	0.368	0.508
	14 OTHER NON-MANUF.	8,959	52,470	0.000	0.378	0.521
	15 STORAGE	3,244	4,910	0.000	0.443	0.611
	17 FOOD MANUFACTURING	33,783	114,776	0.643	0.570	0.786
	18 WOOD MANUFACTURING	28,651	114,679	0.000	0.317	0.437
	20 CHEM. MANUFACTURING	10,639	67,373	0.000	0.361	0.498
	21 METAL MANUFACTURING	69,171	397,989	0.072	0.229	0.316
	22 OTHER MANUFACTURING	58,251	229,004	3.660	2.194	3.026
	TOTAL*	269,853	1,241,902	0.891	0.732	1.009

Louisville

KENTUCKY
 BASIC GROUP I RELATIVITY ANALYSIS
 TABLE 10 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 06/30/18 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) Z-WEIGHTED EXPERIENCE RATIO	(5) Z-WEIGHTED RELATIVITY
38 MULTILINE	04 OTHER MERCANTILE RS	126,723	623,838	0.690	0.646	0.891
CONTRACTORS	08 OFFICES AND BANKS	41,528	184,608	0.193	0.362	0.499
	12 BLDGS UNDER CONST.	12,778	26,214	0.000	0.411	0.567
	14 OTHER NON-MANUF.	4,007	26,030	0.000	0.412	0.568
	TOTAL*	185,036	860,690	0.516	0.561	0.774
TOTAL ALL TOPS*	01 APARTMENTS	568,197	2,939,445	0.541	1.091	1.505
	02 OTHER HABITATIONAL	197,362	901,149	0.528	1.096	1.512
	03 RESTAURANTS & BARS	167,929	666,895	1.695	1.237	1.706
	04 OTHER MERCANTILE RS	890,533	4,399,968	0.691	0.949	1.309
	05 PUBLIC BUILDINGS	3,260	44,408	0.217	1.053	1.452
	06 CHURCHES	86,688	596,233	0.462	1.081	1.492
	07 SCHOOLS	69,979	345,791	5.995	1.971	2.719
	08 OFFICES AND BANKS	410,908	1,894,958	0.734	0.950	1.311
	09 REC. FACILITIES	83,692	409,829	0.131	0.304	0.419
	10 HOTELS AND MOTELS	42,697	253,261	13.546	3.165	4.366
	11 HOSPITALS/NURS HOME	38,785	127,925	1.982	1.317	1.817
	12 BLDGS UNDER CONST.	14,473	29,654	0.000	0.411	0.567
	13 MOTOR VEHICLE RISKS	168,689	685,320	0.513	0.739	1.019
	14 OTHER NON-MANUF.	89,635	416,672	0.360	0.652	0.899
	15 STORAGE	105,290	481,212	0.007	0.728	1.004
	17 FOOD MANUFACTURING	33,783	115,152	0.643	0.570	0.786
	18 WOOD MANUFACTURING	29,915	119,995	0.000	0.321	0.443
	20 CHEM. MANUFACTURING	11,507	68,329	0.000	0.365	0.503
	21 METAL MANUFACTURING	76,674	453,731	0.065	0.244	0.337
	22 OTHER MANUFACTURING	68,385	279,401	3.140	1.933	2.666
	TOTAL*	3,158,381	15,229,328	0.982	1.006	1.387

* TOTALS IN COLUMNS (3), (4) & (5) ARE AVERAGES USING COLUMN (1) AS WEIGHTS.

Lexington-Fayette

KENTUCKY
 BASIC GROUP I RELATIVITY ANALYSIS
 TABLE 10 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 06/30/18 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) Z-WEIGHTED EXPERIENCE RATIO	(5) Z-WEIGHTED RELATIVITY
10 MONOLINE	01 APARTMENTS	946	34,184	0.405	0.168	0.232
	02 OTHER HABITATIONAL	5,776	55,383	0.000	0.097	0.134
	03 RESTAURANTS & BARS	4,498	29,775	0.000	0.098	0.135
	04 OTHER MERCANTILE RS	34,139	167,543	0.000	0.091	0.126
	05 PUBLIC BUILDINGS	1,248	8,520	0.000	0.099	0.137
	06 CHURCHES	0	336	105.551	16.781	23.146
	07 SCHOOLS	100,468	317,349	0.156	0.129	0.178
	08 OFFICES AND BANKS	18,119	88,171	0.000	0.095	0.131
	09 REC. FACILITIES	4,170	26,039	0.181	0.129	0.178
	10 HOTELS AND MOTELS	0	2,885	0.000	0.099	0.137
	11 HOSPITALS/NURS HOME	180	635	0.000	0.100	0.138
	12 BLDGS UNDER CONST.	1,037	2,306	0.000	0.099	0.137
	13 MOTOR VEHICLE RISKS	3,385	16,756	0.000	0.099	0.137
	14 OTHER NON-MANUF.	13,110	61,744	0.000	0.096	0.132
	15 STORAGE	2,347	11,475	0.000	0.099	0.137
	17 FOOD MANUFACTURING	168	392	0.000	0.100	0.138
	18 WOOD MANUFACTURING	0	21	0.000	0.100	0.138
	21 METAL MANUFACTURING	1,084	3,351	0.000	0.099	0.137
	22 OTHER MANUFACTURING	18,101	47,837	0.000	0.097	0.134
	TOTAL*	208,776	874,702	0.081	0.112	0.155
31 MULTILINE	10 HOTELS AND MOTELS	28,209	227,356	7.438	2.134	2.943
MOTEL/HOTEL	TOTAL*	28,209	227,356	7.438	2.134	2.943
32 MULTILINE	01 APARTMENTS	419,439	2,043,123	0.547	1.001	1.381
APARTMENT	02 OTHER HABITATIONAL	179,456	630,986	1.083	1.105	1.524
	TOTAL*	598,895	2,674,109	0.708	1.032	1.424
33 MULTILINE	08 OFFICES AND BANKS	163,894	693,916	0.158	0.948	1.308
OFFICE	TOTAL*	163,894	693,916	0.158	0.948	1.308
34 MULTILINE	03 RESTAURANTS & BARS	159,069	632,229	0.007	0.923	1.273
MERCANTILE	04 OTHER MERCANTILE RS	305,336	1,485,655	2.582	1.380	1.903
	08 OFFICES AND BANKS	19,479	84,581	0.066	0.943	1.301
	13 MOTOR VEHICLE RISKS	13,558	52,974	0.000	0.933	1.287
	14 OTHER NON-MANUF.	7,482	43,919	0.390	0.995	1.372
	15 STORAGE	25,117	107,592	0.000	0.932	1.286
	TOTAL*	530,041	2,406,950	1.497	1.188	1.640

Lexington-Fayette

KENTUCKY

BASIC GROUP I RELATIVITY ANALYSIS

TABLE 10 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1)	(2)	(3)	(4)	(5)
		ACCIDENT YEAR ENDING 06/30/18 AGGREGATE LOSS COSTS	5 - YEAR AGGREGATE LOSS COSTS	5 - YEAR EXPERIENCE RATIO	Z-WEIGHTED EXPERIENCE RATIO	Z-WEIGHTED RELATIVITY
35 MULTILINE INSTITUTIONAL	02 OTHER HABITATIONAL	1,707	5,289	0.000	0.934	1.288
	05 PUBLIC BUILDINGS	7,688	45,767	0.000	0.933	1.287
	06 CHURCHES	75,197	392,908	0.149	0.951	1.312
	07 SCHOOLS	59,037	241,511	0.114	0.948	1.308
	08 OFFICES AND BANKS	15,819	53,706	0.000	0.933	1.287
	09 REC. FACILITIES	6,811	21,684	0.032	0.939	1.295
	11 HOSPITALS/NURS HOME	9,849	27,566	0.000	0.934	1.288
	13 MOTOR VEHICLE RISKS	128	268	0.000	0.934	1.288
	14 OTHER NON-MANUF.	3,981	17,343	0.000	0.934	1.288
	TOTAL*	180,217	806,042	0.101	0.946	1.304
36 MULTILINE SERVICES	03 RESTAURANTS & BARS	29,739	60,131	0.192	0.284	0.392
	04 OTHER MERCANTILE RS	20,532	118,730	0.000	0.237	0.327
	08 OFFICES AND BANKS	23,752	118,470	0.201	0.282	0.389
	09 REC. FACILITIES	40,622	197,568	0.225	0.283	0.390
	13 MOTOR VEHICLE RISKS	58,760	346,790	0.359	0.323	0.446
	14 OTHER NON-MANUF.	29,003	136,302	0.286	0.300	0.414
	15 STORAGE	15,939	48,272	0.079	0.265	0.366
	21 METAL MANUFACTURING	109	1,660	0.000	0.261	0.360
	22 OTHER MANUFACTURING	4,134	27,585	0.000	0.255	0.352
	TOTAL*	222,590	1,055,508	0.226	0.290	0.400
37 MULTILINE INDUST/PROCESS	04 OTHER MERCANTILE RS	13,490	45,023	0.000	0.251	0.346
	08 OFFICES AND BANKS	3,406	17,163	0.000	0.257	0.354
	14 OTHER NON-MANUF.	1,068	5,328	0.000	0.260	0.359
	17 FOOD MANUFACTURING	10,515	38,032	0.000	0.253	0.349
	18 WOOD MANUFACTURING	10,801	32,500	0.000	0.254	0.350
	20 CHEM. MANUFACTURING	809	5,129	0.000	0.260	0.359
	21 METAL MANUFACTURING	18,832	94,205	0.307	0.305	0.421
	22 OTHER MANUFACTURING	25,808	120,556	0.382	0.322	0.444
		TOTAL*	84,729	357,936	0.185	0.286
38 MULTILINE CONTRACTORS	04 OTHER MERCANTILE RS	60,868	377,721	0.077	0.224	0.309
	08 OFFICES AND BANKS	24,446	117,897	1.993	0.679	0.937
	12 BLDGS UNDER CONST.	1,111	6,648	0.000	0.259	0.357
	14 OTHER NON-MANUF.	1,951	8,167	0.000	0.259	0.357
		TOTAL*	88,376	510,433	0.604	0.351

Lexington-Fayette

KENTUCKY

BASIC GROUP I RELATIVITY ANALYSIS

TABLE 10 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 06/30/18 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) Z-WEIGHTED EXPERIENCE RATIO	(5) Z-WEIGHTED RELATIVITY
TOTAL ALL TOPS*	01 APARTMENTS	420,385	2,077,307	0.547	0.999	1.378
	02 OTHER HABITATIONAL	186,939	691,658	1.040	1.072	1.479
	03 RESTAURANTS & BARS	193,306	722,135	0.035	0.805	1.111
	04 OTHER MERCANTILE RS	434,365	2,194,672	1.826	1.027	1.417
	05 PUBLIC BUILDINGS	8,936	54,287	0.000	0.817	1.126
	06 CHURCHES	75,197	393,244	0.149	0.951	1.312
	07 SCHOOLS	159,505	558,860	0.140	0.432	0.596
	08 OFFICES AND BANKS	268,915	1,173,904	0.300	0.797	1.100
	09 REC. FACILITIES	51,603	245,291	0.196	0.357	0.493
	10 HOTELS AND MOTELS	28,209	230,241	7.438	2.134	2.943
	11 HOSPITALS/NURS HOME	10,029	28,201	0.000	0.919	1.268
	12 BLDGS UNDER CONST.	2,148	8,954	0.000	0.182	0.251
	13 MOTOR VEHICLE RISKS	75,831	416,788	0.278	0.423	0.584
	14 OTHER NON-MANUF.	56,595	272,803	0.198	0.387	0.534
	15 STORAGE	43,403	167,339	0.029	0.642	0.886
	17 FOOD MANUFACTURING	10,683	38,424	0.000	0.250	0.346
	18 WOOD MANUFACTURING	10,801	32,521	0.000	0.254	0.350
	20 CHEM. MANUFACTURING	809	5,129	0.000	0.260	0.359
	21 METAL MANUFACTURING	20,025	99,216	0.289	0.294	0.405
	22 OTHER MANUFACTURING	48,043	195,978	0.205	0.231	0.319
	TOTAL*	2,105,727	9,606,952	0.763	0.844	1.164

* TOTALS IN COLUMNS (3), (4) & (5) ARE AVERAGES USING COLUMN (1) AS WEIGHTS.

Balance of State (Kentucky)

KENTUCKY
 BASIC GROUP I RELATIVITY ANALYSIS
 TABLE 10 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 06/30/18 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) Z-WEIGHTED EXPERIENCE RATIO	(5) Z-WEIGHTED RELATIVITY
10 MONOLINE	01 APARTMENTS	62,228	422,469	0.453	0.806	1.112
	02 OTHER HABITATIONAL	45,449	309,780	6.452	2.642	3.644
	03 RESTAURANTS & BARS	45,421	247,837	0.965	0.984	1.357
	04 OTHER MERCANTILE RS	521,342	2,896,670	1.340	1.243	1.714
	05 PUBLIC BUILDINGS	18,333	170,043	0.806	0.947	1.306
	06 CHURCHES	12,672	198,835	10.551	3.423	4.721
	07 SCHOOLS	118,209	678,870	0.195	0.653	0.901
	08 OFFICES AND BANKS	215,166	1,040,247	0.347	0.663	0.914
	09 REC. FACILITIES	73,595	493,259	0.145	0.679	0.937
	10 HOTELS AND MOTELS	35,693	186,095	0.072	0.763	1.052
	11 HOSPITALS/NURS HOME	29,432	128,080	0.163	0.809	1.116
	12 BLDGS UNDER CONST.	107	10,391	0.000	0.837	1.154
	13 MOTOR VEHICLE RISKS	129,445	678,315	0.063	0.597	0.823
	14 OTHER NON-MANUF.	204,034	1,025,051	0.115	0.548	0.756
	15 STORAGE	100,331	611,158	0.450	0.772	1.065
	17 FOOD MANUFACTURING	6,928	67,571	0.000	0.805	1.110
	18 WOOD MANUFACTURING	6,227	24,869	0.000	0.828	1.142
	20 CHEM. MANUFACTURING	12,079	66,224	0.000	0.805	1.110
	21 METAL MANUFACTURING	64,565	322,957	0.090	0.714	0.985
	22 OTHER MANUFACTURING	18,920	114,665	0.028	0.786	1.084
	TOTAL*	1,720,176	9,693,386	0.820	0.926	1.277
31 MULTILINE MOTEL/HOTEL	10 HOTELS AND MOTELS	589,817	3,089,952	1.432	0.859	1.185
	TOTAL*	589,817	3,089,952	1.432	0.859	1.185
32 MULTILINE APARTMENT	01 APARTMENTS	1,786,677	8,438,576	0.823	0.735	1.014
	02 OTHER HABITATIONAL	1,035,200	4,598,503	0.683	0.691	0.953
	TOTAL*	2,821,877	13,037,079	0.772	0.719	0.992
33 MULTILINE OFFICE	08 OFFICES AND BANKS	1,100,204	4,860,560	0.591	0.667	0.920
	TOTAL*	1,100,204	4,860,560	0.591	0.667	0.920
34 MULTILINE MERCANTILE	03 RESTAURANTS & BARS	960,098	4,631,629	1.209	0.824	1.137
	04 OTHER MERCANTILE RS	3,934,558	19,996,550	0.560	0.632	0.872
	08 OFFICES AND BANKS	220,612	1,012,479	0.347	0.631	0.870
	13 MOTOR VEHICLE RISKS	276,424	955,515	0.649	0.685	0.945
	14 OTHER NON-MANUF.	87,474	425,556	0.269	0.622	0.858
	15 STORAGE	430,333	2,032,970	1.415	0.840	1.159
	TOTAL*	5,909,499	29,054,699	0.720	0.681	0.939

Balance of State (Kentucky)

KENTUCKY
 BASIC GROUP I RELATIVITY ANALYSIS
 TABLE 10 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 06/30/18 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) Z-WEIGHTED EXPERIENCE RATIO	(5) Z-WEIGHTED RELATIVITY
35 MULTILINE	02 OTHER HABITATIONAL	5,824	43,009	0.343	0.638	0.880
INSTITUTIONAL	05 PUBLIC BUILDINGS	240,301	1,233,837	0.607	0.677	0.934
	06 CHURCHES	1,621,435	9,629,326	0.281	0.555	0.766
	07 SCHOOLS	2,446,780	11,344,192	0.681	0.689	0.950
	08 OFFICES AND BANKS	273,613	1,335,544	0.780	0.710	0.979
	09 REC. FACILITIES	94,106	464,190	0.024	0.581	0.801
	11 HOSPITALS/NURS HOME	158,744	812,069	0.303	0.625	0.862
	13 MOTOR VEHICLE RISKS	9,385	75,625	0.000	0.583	0.804
	14 OTHER NON-MANUF.	122,830	616,902	2.878	1.069	1.474
	TOTAL*	4,973,018	25,554,694	0.581	0.651	0.898
36 MULTILINE	03 RESTAURANTS & BARS	136,245	298,057	0.023	0.524	0.723
SERVICES	04 OTHER MERCANTILE RS	396,071	2,013,043	0.199	0.530	0.731
	08 OFFICES AND BANKS	236,102	1,435,940	0.218	0.539	0.743
	09 REC. FACILITIES	555,167	2,858,035	1.393	0.765	1.055
	13 MOTOR VEHICLE RISKS	1,035,939	5,191,802	0.740	0.639	0.881
	14 OTHER NON-MANUF.	411,062	1,881,216	0.481	0.582	0.803
	15 STORAGE	287,149	1,588,630	1.359	0.735	1.014
	21 METAL MANUFACTURING	14,158	46,727	0.000	0.525	0.724
	22 OTHER MANUFACTURING	42,757	234,077	0.383	0.574	0.792
	TOTAL*	3,114,650	15,547,527	0.731	0.635	0.876
37 MULTILINE	04 OTHER MERCANTILE RS	216,146	1,263,311	2.832	0.971	1.339
INDUST/PROCESS	08 OFFICES AND BANKS	156,706	457,263	0.162	0.541	0.746
	13 MOTOR VEHICLE RISKS	2,695	9,144	0.000	0.526	0.726
	14 OTHER NON-MANUF.	68,332	367,323	0.891	0.645	0.890
	15 STORAGE	23,189	101,218	0.343	0.570	0.786
	17 FOOD MANUFACTURING	217,151	898,451	0.524	0.592	0.817
	18 WOOD MANUFACTURING	285,398	1,404,379	0.390	0.569	0.785
	20 CHEM. MANUFACTURING	61,672	224,574	0.031	0.526	0.726
	21 METAL MANUFACTURING	715,595	3,826,360	0.232	0.520	0.717
	22 OTHER MANUFACTURING	400,747	2,044,477	0.044	0.501	0.691
	TOTAL*	2,147,631	10,596,500	0.520	0.582	0.803

Balance of State (Kentucky)

KENTUCKY
 BASIC GROUP I RELATIVITY ANALYSIS
 TABLE 10 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 06/30/18 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) Z-WEIGHTED EXPERIENCE RATIO	(5) Z-WEIGHTED RELATIVITY
38 MULTILINE	04 OTHER MERCANTILE RS	956,635	4,643,185	0.247	0.518	0.714
CONTRACTORS	08 OFFICES AND BANKS	252,679	1,125,662	0.596	0.603	0.832
	12 BLDGS UNDER CONST.	58,645	226,437	0.030	0.526	0.726
	14 OTHER NON-MANUF.	38,811	213,150	0.088	0.534	0.737
	TOTAL*	1,306,770	6,208,434	0.300	0.535	0.738
TOTAL ALL TOPS*	01 APARTMENTS	1,848,905	8,861,045	0.811	0.737	1.017
	02 OTHER HABITATIONAL	1,086,473	4,951,292	0.923	0.772	1.065
	03 RESTAURANTS & BARS	1,141,764	5,177,523	1.058	0.795	1.096
	04 OTHER MERCANTILE RS	6,024,752	30,812,759	0.636	0.672	0.927
	05 PUBLIC BUILDINGS	258,634	1,403,880	0.621	0.696	0.960
	06 CHURCHES	1,634,107	9,828,161	0.361	0.577	0.796
	07 SCHOOLS	2,564,989	12,023,062	0.659	0.687	0.948
	08 OFFICES AND BANKS	2,455,082	11,267,695	0.506	0.641	0.885
	09 REC. FACILITIES	722,868	3,815,484	1.088	0.732	1.010
	10 HOTELS AND MOTELS	625,510	3,276,047	1.354	0.854	1.177
	11 HOSPITALS/NURS HOME	188,176	940,149	0.281	0.653	0.902
	12 BLDGS UNDER CONST.	58,752	236,828	0.030	0.527	0.726
	13 MOTOR VEHICLE RISKS	1,453,888	6,910,401	0.656	0.644	0.887
	14 OTHER NON-MANUF.	932,543	4,529,198	0.710	0.645	0.890
	15 STORAGE	841,002	4,333,976	1.251	0.789	1.088
	17 FOOD MANUFACTURING	224,079	966,022	0.508	0.599	0.826
	18 WOOD MANUFACTURING	291,625	1,429,248	0.382	0.574	0.792
	20 CHEM. MANUFACTURING	73,751	290,798	0.026	0.572	0.789
	21 METAL MANUFACTURING	794,318	4,196,044	0.216	0.536	0.739
	22 OTHER MANUFACTURING	462,424	2,393,219	0.075	0.520	0.716
	TOTAL*	23,683,642	117,642,831	0.676	0.678	0.935

* TOTALS IN COLUMNS (3), (4) & (5) ARE AVERAGES USING COLUMN (1) AS WEIGHTS.

ENTIRE STATE

KENTUCKY

BASIC GROUP I RELATIVITY ANALYSIS

TABLE 10 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 06/30/18 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) Z-WEIGHTED EXPERIENCE RATIO	(5) Z-WEIGHTED RELATIVITY
10 MONOLINE	01 APARTMENTS	67,524	540,933	0.425	0.767	1.058
	02 OTHER HABITATIONAL	55,742	453,105	5.486	2.264	3.123
	03 RESTAURANTS & BARS	54,321	298,519	0.807	0.863	1.190
	04 OTHER MERCANTILE RS	599,038	3,356,428	1.191	1.117	1.540
	05 PUBLIC BUILDINGS	19,591	181,349	0.754	0.893	1.231
	06 CHURCHES	14,260	214,826	9.670	3.141	4.332
	07 SCHOOLS	219,337	1,002,052	0.177	0.412	0.569
	08 OFFICES AND BANKS	258,002	1,281,990	0.331	0.605	0.834
	09 REC. FACILITIES	81,733	580,787	0.140	0.635	0.876
	10 HOTELS AND MOTELS	36,508	195,445	0.070	0.755	1.041
	11 HOSPITALS/NURS HOME	30,715	132,981	0.156	0.791	1.090
	12 BLDGS UNDER CONST.	2,839	16,137	0.000	0.313	0.431
	13 MOTOR VEHICLE RISKS	141,737	738,939	0.058	0.571	0.787
	14 OTHER NON-MANUF.	223,103	1,125,051	0.105	0.517	0.713
	15 STORAGE	113,889	678,868	0.396	0.717	0.989
	17 FOOD MANUFACTURING	7,096	68,339	0.000	0.788	1.087
	18 WOOD MANUFACTURING	7,491	30,206	0.000	0.757	1.044
	20 CHEM. MANUFACTURING	12,947	67,180	0.000	0.779	1.074
	21 METAL MANUFACTURING	71,183	371,539	0.082	0.678	0.935
	22 OTHER MANUFACTURING	40,166	170,639	0.013	0.446	0.615
	TOTAL*	2,057,222	11,505,313	0.715	0.813	1.121
31 MULTILINE MOTEL/HOTEL	10 HOTELS AND MOTELS	659,908	3,564,104	2.474	1.064	1.467
	TOTAL*	659,908	3,564,104	2.474	1.064	1.467
32 MULTILINE APARTMENT	01 APARTMENTS	2,769,963	13,336,864	0.725	0.849	1.171
	02 OTHER HABITATIONAL	1,401,712	6,026,648	0.699	0.796	1.099
	TOTAL*	4,171,675	19,363,512	0.716	0.831	1.147
33 MULTILINE OFFICE	08 OFFICES AND BANKS	1,485,672	6,570,517	0.602	0.774	1.067
	TOTAL*	1,485,672	6,570,517	0.602	0.774	1.067
34 MULTILINE MERCANTILE	03 RESTAURANTS & BARS	1,272,411	5,887,342	1.137	0.896	1.235
	04 OTHER MERCANTILE RS	4,867,797	24,550,706	0.718	0.745	1.027
	08 OFFICES AND BANKS	289,435	1,293,720	0.454	0.747	1.031
	13 MOTOR VEHICLE RISKS	334,578	1,146,351	0.554	0.743	1.024
	14 OTHER NON-MANUF.	120,500	559,720	0.380	0.755	1.041
	15 STORAGE	515,852	2,441,221	1.182	0.866	1.194
	TOTAL*	7,400,573	35,879,060	0.799	0.779	1.075

ENTIRE STATE

KENTUCKY
 BASIC GROUP I RELATIVITY ANALYSIS
 TABLE 10 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 06/30/18 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) Z-WEIGHTED EXPERIENCE RATIO	(5) Z-WEIGHTED RELATIVITY
35 MULTILINE	02 OTHER HABITATIONAL	13,320	64,346	1.135	0.998	1.377
INSTITUTIONAL	05 PUBLIC BUILDINGS	251,239	1,321,226	0.583	0.690	0.951
	06 CHURCHES	1,781,732	10,602,812	0.282	0.597	0.823
	07 SCHOOLS	2,575,136	11,925,661	0.813	0.730	1.007
	08 OFFICES AND BANKS	316,816	1,507,540	0.703	0.752	1.038
	09 REC. FACILITIES	102,622	505,685	0.029	0.612	0.845
	11 HOSPITALS/NURS HOME	206,275	963,294	0.606	0.771	1.064
	13 MOTOR VEHICLE RISKS	10,137	80,340	0.000	0.614	0.847
	14 OTHER NON-MANUF.	131,583	662,268	2.687	1.064	1.466
	TOTAL*	5,388,860	27,633,172	0.642	0.693	0.956
36 MULTILINE	03 RESTAURANTS & BARS	176,267	380,692	0.051	0.477	0.659
SERVICES	04 OTHER MERCANTILE RS	467,543	2,358,488	0.192	0.499	0.688
	08 OFFICES AND BANKS	290,470	1,708,195	0.197	0.493	0.680
	09 REC. FACILITIES	673,808	3,384,132	1.177	0.681	0.938
	13 MOTOR VEHICLE RISKS	1,209,261	6,037,735	0.718	0.625	0.862
	14 OTHER NON-MANUF.	480,459	2,199,166	0.456	0.552	0.761
	15 STORAGE	333,521	1,756,310	1.174	0.674	0.930
	21 METAL MANUFACTURING	16,236	58,898	0.000	0.512	0.706
	22 OTHER MANUFACTURING	53,880	303,922	0.332	0.533	0.735
	TOTAL*	3,701,445	18,187,538	0.661	0.595	0.820
37 MULTILINE	04 OTHER MERCANTILE RS	271,046	1,497,033	2.258	0.827	1.141
INDUST/PROCESS	08 OFFICES AND BANKS	175,857	546,428	0.148	0.520	0.717
	13 MOTOR VEHICLE RISKS	2,695	9,144	0.000	0.526	0.726
	14 OTHER NON-MANUF.	78,359	425,121	0.777	0.609	0.840
	15 STORAGE	26,433	106,128	0.301	0.554	0.765
	17 FOOD MANUFACTURING	261,449	1,051,259	0.518	0.576	0.794
	18 WOOD MANUFACTURING	324,850	1,551,558	0.343	0.536	0.740
	20 CHEM. MANUFACTURING	73,120	297,076	0.026	0.499	0.688
	21 METAL MANUFACTURING	803,598	4,318,554	0.220	0.490	0.676
	22 OTHER MANUFACTURING	484,806	2,394,037	0.496	0.695	0.958
	TOTAL*	2,502,213	12,196,338	0.549	0.588	0.811

ENTIRE STATE

KENTUCKY

BASIC GROUP I RELATIVITY ANALYSIS

TABLE 10 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1)	(2)	(3)	(4)	(5)
		ACCIDENT YEAR ENDING 06/30/18 AGGREGATE LOSS COSTS	5 - YEAR AGGREGATE LOSS COSTS	5 - YEAR EXPERIENCE RATIO	Z-WEIGHTED EXPERIENCE RATIO	Z-WEIGHTED RELATIVITY
38 MULTILINE	04 OTHER MERCANTILE RS	1,144,226	5,644,744	0.287	0.516	0.712
CONTRACTORS	08 OFFICES AND BANKS	318,653	1,428,167	0.651	0.578	0.796
	12 BLDGS UNDER CONST.	72,534	259,299	0.024	0.502	0.692
	14 OTHER NON-MANUF.	44,769	247,347	0.076	0.511	0.705
	TOTAL*	1,580,182	7,579,557	0.342	0.528	0.728
TOTAL ALL TOPS*	01 APARTMENTS	2,837,487	13,877,797	0.717	0.847	1.168
	02 OTHER HABITATIONAL	1,470,774	6,544,099	0.884	0.854	1.178
	03 RESTAURANTS & BARS	1,502,999	6,566,553	0.997	0.846	1.166
	04 OTHER MERCANTILE RS	7,349,650	37,407,399	0.713	0.727	1.002
	05 PUBLIC BUILDINGS	270,830	1,502,575	0.596	0.705	0.972
	06 CHURCHES	1,795,992	10,817,638	0.357	0.617	0.851
	07 SCHOOLS	2,794,473	12,927,713	0.763	0.705	0.972
	08 OFFICES AND BANKS	3,134,905	14,336,557	0.518	0.695	0.959
	09 REC. FACILITIES	858,163	4,470,604	0.941	0.668	0.921
	10 HOTELS AND MOTELS	696,416	3,759,549	2.348	1.047	1.444
	11 HOSPITALS/NURS HOME	236,990	1,096,275	0.548	0.773	1.067
	12 BLDGS UNDER CONST.	75,373	275,436	0.023	0.495	0.682
	13 MOTOR VEHICLE RISKS	1,698,408	8,012,509	0.625	0.643	0.887
	14 OTHER NON-MANUF.	1,078,773	5,218,673	0.654	0.632	0.872
	15 STORAGE	989,695	4,982,527	1.065	0.776	1.070
	17 FOOD MANUFACTURING	268,545	1,119,598	0.505	0.581	0.802
	18 WOOD MANUFACTURING	332,341	1,581,764	0.335	0.541	0.747
	20 CHEM. MANUFACTURING	86,067	364,256	0.022	0.541	0.746
	21 METAL MANUFACTURING	891,017	4,748,991	0.205	0.506	0.697
	22 OTHER MANUFACTURING	578,852	2,868,598	0.448	0.663	0.914
	TOTAL*	28,947,750	142,479,111	0.716	0.725	1.000

* TOTALS IN COLUMNS (3), (4) & (5) ARE AVERAGES USING COLUMN (1) AS WEIGHTS.

KENTUCKY

SPECIAL CAUSES OF LOSS RELATIVITY ANALYSIS
 TABLE 11 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 06/30/18 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) Z-WEIGHTED EXPERIENCE RATIO	(5) Z-WEIGHTED RELATIVITY
10 MONOLINE	01 BUILDINGS	539,074	3,318,368	1.374	1.340	1.309
	02 RES. APTS. AND COND	9,590	65,541	0.260	0.731	0.714
	03 OFFICES	77,805	434,765	0.993	0.981	0.958
	04 MERCANTILE - HIGH	115,258	683,520	0.182	0.403	0.394
	05 MERCANTILE - MEDIUM	22,601	133,667	0.269	0.673	0.657
	06 MERCANTILE - LOW	23,283	117,744	0.153	0.639	0.624
	07 MOTELS AND HOTELS	3,654	16,883	0.214	0.776	0.758
	08 INSTITUTIONAL - HIG	186,794	1,025,933	0.272	0.420	0.410
	09 INSTITUTIONAL - LOW	20,235	132,824	1.890	1.346	1.314
	10 INDUST-PROC - HIGH	4,683	38,121	0.000	0.687	0.671
	11 INDUST-PROC - LOW	43,712	242,001	1.220	1.094	1.068
	12 SERVICE - HIGH	22,535	126,036	1.852	1.323	1.292
	13 SERVICE - LOW	36,604	234,907	0.288	0.617	0.603
	14 CONTRACTORS	3,157	19,891	0.651	0.882	0.861
	TOTAL*	1,108,985	6,590,201	0.946	0.989	0.966
31 MULTILINE MOTEL/HOTEL	01 BUILDINGS	325,890	1,636,346	2.097	1.840	1.797
	07 MOTELS AND HOTELS	59,424	377,403	0.792	0.922	0.900
	TOTAL*	385,314	2,013,749	1.896	1.698	1.659
32 MULTILINE APARTMENT	01 BUILDINGS	2,067,819	9,131,203	0.488	0.518	0.506
	02 RES. APTS. AND COND	251,668	1,338,775	0.227	0.449	0.438
	TOTAL*	2,319,487	10,469,978	0.460	0.510	0.499
33 MULTILINE OFFICE	01 BUILDINGS	798,479	3,532,299	0.554	0.616	0.602
	03 OFFICES	357,119	1,552,611	0.626	0.726	0.709
	08 INSTITUTIONAL - HIG	188	2,484	0.000	0.918	0.896
	12 SERVICE - HIGH	211	851	0.000	0.920	0.898
	14 CONTRACTORS	22	22	0.000	0.921	0.899
	TOTAL*	1,156,019	5,088,267	0.576	0.650	0.635

KENTUCKY

SPECIAL CAUSES OF LOSS RELATIVITY ANALYSIS
 TABLE 11 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1)	(2)	(3)	(4)	(5)	
		ACCIDENT YEAR ENDING 06/30/18 AGGREGATE LOSS COSTS	5 - YEAR AGGREGATE LOSS COSTS	5 - YEAR EXPERIENCE RATIO	Z-WEIGHTED EXPERIENCE RATIO	Z-WEIGHTED RELATIVITY	
34 MULTILINE MERCANTILE	01 BUILDINGS	2,281,859	11,106,666	0.630	0.648	0.633	
	03 OFFICES	8,005	25,339	0.817	0.998	0.975	
	04 MERCANTILE - HIGH	593,032	3,017,642	0.681	0.733	0.716	
	05 MERCANTILE - MEDIUM	419,141	2,462,977	0.607	0.681	0.665	
	06 MERCANTILE - LOW	228,237	1,076,101	0.384	0.591	0.577	
	08 INSTITUTIONAL - HIG	340	2,285	0.000	0.918	0.896	
	09 INSTITUTIONAL - LOW	25	36	0.000	0.921	0.899	
	11 INDUST-PROC - LOW	1,322	2,964	0.000	0.917	0.896	
	12 SERVICE - HIGH	4,802	15,899	0.184	0.921	0.899	
	13 SERVICE - LOW	9,210	40,447	0.588	0.957	0.935	
	14 CONTRACTORS	1,015	7,323	0.000	0.910	0.889	
	TOTAL*	3,546,988	17,757,679	0.619	0.665	0.649	
	35 MULTILINE INSTITUTIONAL	01 BUILDINGS	1,290,631	6,848,433	1.474	1.442	1.408
		03 OFFICES	396	1,995	1.533	1.081	1.056
04 MERCANTILE - HIGH		105	230	0.000	0.921	0.899	
06 MERCANTILE - LOW		221	1,104	0.000	0.920	0.898	
08 INSTITUTIONAL - HIG		923,170	5,005,232	3.216	3.006	2.936	
09 INSTITUTIONAL - LOW		242,497	1,483,900	0.948	0.969	0.946	
12 SERVICE - HIGH		745	3,650	0.000	0.916	0.895	
13 SERVICE - LOW		1,048	4,819	0.000	0.914	0.893	
14 CONTRACTORS		1,302	6,781	0.000	0.911	0.890	
TOTAL*		2,460,115	13,356,144	2.074	1.981	1.935	
36 MULTILINE SERVICES		01 BUILDINGS	1,431,336	7,093,671	1.550	1.526	1.490
		03 OFFICES	3,794	14,827	0.184	0.956	0.934
		04 MERCANTILE - HIGH	10,891	69,132	0.000	0.827	0.808
		05 MERCANTILE - MEDIUM	2,156	9,790	0.122	0.959	0.937
	06 MERCANTILE - LOW	1,720	8,145	0.000	0.948	0.926	
	08 INSTITUTIONAL - HIG	5,976	43,778	0.000	0.873	0.853	
	09 INSTITUTIONAL - LOW	10,277	44,005	0.000	0.873	0.853	
	10 INDUST-PROC - HIGH	1,221	1,743	0.000	0.963	0.940	
	11 INDUST-PROC - LOW	3,376	14,561	1.149	1.077	1.052	
	12 SERVICE - HIGH	481,528	2,692,106	0.765	0.801	0.782	
	13 SERVICE - LOW	268,192	1,288,606	0.961	0.984	0.961	
	14 CONTRACTORS	1,792	11,274	0.000	0.941	0.919	
	TOTAL*	2,222,259	11,291,638	1.282	1.292	1.262	

KENTUCKY

SPECIAL CAUSES OF LOSS RELATIVITY ANALYSIS
 TABLE 11 - SUMMARY OF EXPERINCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 06/30/18 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) Z-WEIGHTED EXPERIENCE RATIO	(5) Z-WEIGHTED RELATIVITY
37 MULTILINE INDUST/PROC	01 BUILDINGS	498,353	2,727,241	0.995	1.004	0.980
	03 OFFICES	1,225	5,649	0.000	0.954	0.932
	04 MERCANTILE - HIGH	3,518	22,823	0.000	0.916	0.895
	05 MERCANTILE - MEDIUM	377	3,083	0.000	0.960	0.938
	06 MERCANTILE - LOW	0	23	0.000	1.000	1.000
	10 INDUST-PROC - HIGH	84,491	394,812	0.181	0.589	0.575
	11 INDUST-PROC - LOW	358,856	1,877,612	0.561	0.643	0.628
	12 SERVICE - HIGH	607	1,277	0.000	0.964	0.941
	13 SERVICE - LOW	282	1,543	0.000	0.963	0.940
	14 CONTRACTORS	218	431	0.000	0.966	0.943
	TOTAL*	947,927	5,034,494	0.752	0.830	0.810
38 MULTILINE CONTRACTORS	01 BUILDINGS	454,233	2,246,293	0.847	0.878	0.857
	03 OFFICES	9,982	61,690	5.019	1.908	1.863
	04 MERCANTILE - HIGH	50,555	268,008	0.220	0.683	0.667
	05 MERCANTILE - MEDIUM	1,099	6,078	0.958	1.055	1.030
	06 MERCANTILE - LOW	11,637	58,052	0.029	0.853	0.833
	08 INSTITUTIONAL - HIG	178	641	0.000	0.966	0.943
	11 INDUST-PROC - LOW	9	9	0.000	0.967	0.944
	12 SERVICE - HIGH	1,817	3,558	0.000	0.959	0.937
	13 SERVICE - LOW	1,312	5,193	0.000	0.955	0.933
	14 CONTRACTORS	460,833	2,055,781	0.980	0.993	0.970
	TOTAL*	991,655	4,705,303	0.907	0.932	0.910
TOTAL ALL TOPS*	01 BUILDINGS	9,687,674	47,640,520	0.961	0.961	0.938
	02 RES. APTS. AND COND	261,258	1,404,316	0.228	0.459	0.449
	03 OFFICES	458,326	2,096,876	0.783	0.803	0.784
	04 MERCANTILE - HIGH	773,359	4,061,355	0.564	0.682	0.667
	05 MERCANTILE - MEDIUM	445,374	2,615,595	0.588	0.683	0.667
	06 MERCANTILE - LOW	265,098	1,261,169	0.345	0.609	0.595
	07 MOTELS AND HOTELS	63,078	394,286	0.759	0.913	0.892
	08 INSTITUTIONAL - HIG	1,116,646	6,080,353	2.704	2.561	2.501
	09 INSTITUTIONAL - LOW	273,034	1,660,765	0.982	0.993	0.970
	10 INDUST-PROC - HIGH	90,395	434,676	0.169	0.599	0.585
	11 INDUST-PROC - LOW	407,275	2,137,147	0.635	0.696	0.680
	12 SERVICE - HIGH	512,245	2,843,377	0.802	0.826	0.807
	13 SERVICE - LOW	316,648	1,575,515	0.864	0.941	0.918
	14 CONTRACTORS	468,339	2,101,503	0.969	0.992	0.968
	TOTAL*	15,138,749	76,307,453	1.009	1.024	1.000

* TOTALS IN COLUMNS (3) & (4) ARE AVERAGES USING COLUMN (1) AS WEIGHTS.

EXPLANATORY NOTES TO TABLES 10 AND 11

BASIC GROUP I/SPECIAL CAUSES OF LOSS RELATIVITY ANALYSIS
SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

INTRODUCTION	<p>The experience used in the relativity analysis and displayed on Tables 10 and 11 is the latest five accident years of data reported under the Commercial Statistical Plan. As in the overall review, loss costs have been adjusted to current ISO loss cost and prospective amount of insurance levels (with multiline aggregate loss costs adjusted additionally by the current implicit package modification factors). Incurred losses are adjusted to prospective cost levels, and are further adjusted by the Basic Group I large loss procedure and the Special Causes of Loss excess procedure. Losses have also been developed to their ultimate settlement value by application of loss development factors.</p>
COLUMN (1)	<p><u>2018 AGGREGATE LOSS COSTS</u></p> <p>The latest accident year aggregate loss costs (adjusted as described above) are used as weights both in the calculation of any totals shown in this table and in the iterative formulas used in the simultaneous review procedure.</p>
COLUMN (2)	<p><u>2014-2018 AGGREGATE LOSS COSTS</u></p> <p>The combined five-year adjusted aggregate loss costs (adjusted as described above) are used to calculate the experience ratios in column (3).</p>
COLUMN (3)	<p><u>FIVE-YEAR EXPERIENCE RATIOS</u></p> <p>These are the ratios of the combined five-year adjusted incurred losses (adjusted as described above) to the combined five-year adjusted aggregate loss costs as shown in column (2). Any totals which are shown are weighted averages using the adjusted aggregate loss costs in column (1).</p>
COLUMN (4)	<p><u>CREDIBILITY (Z) WEIGHTED EXPERIENCE RATIO</u></p> <p>A credibility procedure is applied to the initial experience ratios in column (3) on a cell-by-cell basis prior to the simultaneous review procedure. The credibility values are calculated using an empirical Bayesian credibility procedure. In the following discussion, cell refers to an individual combination of TOP, rating group or category, and territory (where applicable).</p>

EXPLANATORY NOTES TO TABLES 10 AND 11 (cont'd)

COLUMN (4)
(cont'd)

The important concept underlying empirical Bayesian credibility is that credibility should depend both on the overall variation of the group of which the cell is a member and the variation of the yearly experience ratios for the cell. Therefore, if a cell's data is very stable then a relatively high credibility value is assigned, and vice versa.

The empirical Bayesian credibility formula for individual cell credibility is $Z = ((C-3)/C) (P/(P+K)) + (3/C)$. P equals the cell's five-year adjusted aggregate loss costs and C equals the number of unique combinations of rating variables (Territory, TOP and Rating Group/Category) within a class group. The K value is estimated from the underlying data using the empirical Bayes method and varies by TOP group and by territory where applicable. The three TOP groups used in this analysis are: Monoline (TOP 10), Premises (TOP's 31-35), and Operations (TOP's 36-38). The 3/C term corrects for the statistical bias associated with the credibility process. The minimum credibility that is possible is 3/C.

COLUMN (5)

WEIGHTED RELATIVITIES

The relativities are the ratios of the five-year credibility-weighted experience ratios shown in column (4) to the average five-year credibility-weighted experience ratio for all TOP's, rating groups and territories (where applicable) combined. These relativities represent how much better or worse than average the experience for a given cell is. They are used along with the aggregate loss costs in column (1) as input for the simultaneous review procedure.

KENTUCKY

TABLE 12 - BASIC GROUP II RELATIVITY ANALYSIS

INDICATED LOSS COST ADJUSTMENT: +0.5%

	(1) ACCIDENT YEAR ENDING 06/30/18 AGGR. LOSS COSTS AT CURRENT IMPLICIT PMF	(2) ACCIDENT YEARS 2009-2018 EXPER. RATIO AT CURRENT PMF	(3) FORMULA RELATIVITY (2) / 0.977	(4) CREDI- BILITY Z C	(5) Z WEIGHTED RELA- TIVITY D	(6) BALANCED FORMULA RELA- TIVITY E	(7) NORMALIZED FORMULA RELA- TIVITY F	(8) CURRENT IMPLICIT PMF	(9) INDICATED IMPLICIT PMF G	(10) INDIC. LOSS COST ADJUST
MONOLINE	1,328,082	1.036	1.060	0.283	1.017	1.017	1.0187			+2.4%
MULTILINE	19,354,260	0.973	0.996	0.805	0.997	0.997	0.9986			+0.4%
-----	-----	-----	-----	-----	-----	-----	-----			-----
COVERAGE	20,682,342	0.977	1.000			0.9983 B	0.9999			+0.5%
MULTILINE TOP										
31 MOTEL/HOTEL	651,743	1.207	1.235	0.121	1.028	1.026	1.0277	1.117	1.127	+3.3%
32 APARTMENT	3,544,700	1.295	1.325	0.384	1.125	1.123	1.1249	1.028	1.135	+13.1%
33 OFFICE	1,241,655	0.751	0.769	0.182	0.958	0.956	0.9576	0.763	0.717	-3.8%
34 MERCANTILE	5,015,151	0.909	0.930	0.513	0.964	0.962	0.9636	0.980	0.927	-3.2%
35 INSTITUTIONAL	3,555,861	1.055	1.080	0.481	1.038	1.036	1.0378	0.773	0.787	+4.3%
36 SERVICES	3,106,483	0.697	0.713	0.409	0.883	0.881	0.8825	1.054	0.913	-11.3%
37 INDUST/PROCESS	1,201,110	1.166	1.193	0.204	1.039	1.037	1.0388	0.699	0.713	+4.4%
38 CONTRACTORS	1,037,557	0.616	0.631	0.179	0.934	0.932	0.9336	1.074	0.984	-6.2%
-----	-----	-----	-----	-----	-----	-----	-----			-----
	19,354,260	0.973 B	0.996		0.999 B	0.997 B	0.9986 B			+0.4%

B - AVERAGE WEIGHTED BY COLUMN (1)

C - CREDIBILITY = P/(P+K) WHERE P REPRESENTS THE TOTAL 10 YEAR ADJUSTED LOSS COSTS AND K = 45,000,000

D - (5) = (3) * (4) + (1.000 - (4))

E - (6) = (5) * (0.997/0.999)

F - (7) = (6) / 0.9983

G - (9) = (7) * (8) / (1.0187)

EXPLANATORY NOTES TO TABLE 12

BASIC GROUP II RELATIVITY ANALYSIS

INTRODUCTION

The explanations which follow clarify Table 12, the Basic Group II (BG II) relativity analysis. The purpose of this analysis is to:

- (1) determine the monoline loss cost level need;
- (2) determine indicated changes to the eight CPP package modification factors (PMFs) based on Basic Group II experience.

COLUMN (1)

2018 AGGREGATE LOSS COSTS

The latest accident year adjusted aggregate loss costs (adjusted in the same manner as in the overall review, i.e. to current manual loss cost and prospective amount of insurance levels, with multiline aggregate loss costs further adjusted to current IPMF level) are used as weights in the calculation of any totals shown in this table.

COLUMN (2)

2009 - 2018 EXPERIENCE RATIO

These experience ratios are the ratios of the combined ten-year CSP adjusted incurred losses (adjusted to current deductible and prospective cost levels including loss development, and smoothed by the BG II excess loss procedure) to the combined ten year CSP adjusted aggregate loss costs. Any totals which are shown are weighted averages using the aggregate loss costs in column (1). When a dash is displayed in the column, it indicates that the indicated IPMF which resulted from this procedure was capped. The procedure which follows when capping occurs is described below.

COLUMN (3)

FORMULA RELATIVITY

The formula relativities are the ratios of the ten year experience ratios for the type of policy (either monoline vs. multiline or individual multiline programs) to the average ten year experience ratio for monoline and multiline combined. These relativities represent how much better or worse than average the experience for a given type of policy is. Again, any totals which are shown are weighted averages and the display of a dash indicates that the resulting IPMF was capped. Unlike the BG I and SCL relativity analyses, the BG II analysis does not employ a simultaneous review procedure since a one way review is involved. That is, the overall loss cost change is only distributed across type of policy; no other rating variables are considered.

EXPLANATORY NOTES TO TABLE 12 (cont'd)

COLUMN (4)

CREDIBILITY

The credibility of the experience for each type of policy is determined from the formula:

$$Z = \frac{P}{P + K}$$

where P is the ten year aggregate adjusted loss costs for a given type of policy, and K is a constant loss cost volume of \$45,000,000.

COLUMN (5)

Z - WEIGHTED RELATIVITY

The weighted relativity is a weighted average of the individual TOP formula relativity and the overall (coverage) formula relativity using credibility and its complement as the respective weights. Therefore, to the extent that the indication for a type of policy is not fully credible, the complement of credibility is assigned to the statewide coverage level change.

COLUMN (6)

BALANCED FORMULA RELATIVITY

The individual multiline weighted relativities are balanced to the multiline weighted relativity level by applying a factor equal to the overall multiline relativity (i.e. the weighted relativity for all multiline combined which is shown on the top of the exhibit directly under the corresponding monoline relativity) divided by the average multiline relativity (i.e. the weighted average of the individual multiline weighted relativities which is shown on the bottom of the exhibit). When the indicated IPMF for a type of policy is capped, the balanced relativity is set equal to the product of the capped IPMF in column (9) and the monoline balanced formula relativity in column (6), divided by the current IPMF in column (8).

COLUMN (7)

NORMALIZED FORMULA RELATIVITY

The normalized relativity is equal to the balanced formula relativity divided by the average monoline/multiline combined relativity. This balances the average monoline/multiline relativity to unity.

COLUMN (8)

CURRENT IMPLICIT PMF

This is the current IPMF for each multiline type of policy.

EXPLANATORY NOTES TO TABLE 12 (cont'd)

COLUMN (9)

INDICATED IMPLICIT PMF

The indicated IPMF is calculated from the normalized relativities as follows:

$$\frac{\text{TOP y indicated IPMF}}{\text{IPMF}} = \frac{(\text{TOP y current IPMF})(\text{TOP y relativity})}{\text{monoline relativity}}$$

For each CPP type of policy the indicated IPMF is subject to a minimum value of 0.50 and a maximum value of 1.50. If an indicated IPMF falls outside one of those limits, it is capped at that amount, the aggregate loss costs for that type of policy are adjusted to the capped IPMF level, and the entire relativity review as described above is redone to take this into account. If an IPMF has been capped it is so noted in footnote A.

COLUMN (10)

INDICATED LOSS COST CHANGES

The indicated monoline and multiline (by TOP) changes are calculated by taking the product of the statewide loss cost level change and the corresponding TOP relativity.

The overall multiline loss cost level change is the aggregate loss cost weighted average of all multiline TOP loss cost level changes.

MULTILINE
CONSIDERATIONS

It should be noted that although this procedure generates multiline indications, this filing only addresses monoline loss cost levels. That is, upon implementation of this filing only the monoline loss costs will be revised. The multiline indications developed here will be combined with those of the other component coverages, e.g. GL Premises and Operations in the CPP review for the purpose of revising the package modification factors.

KENTUCKY
COMMERCIAL PROPERTY INSURANCE

SECTION C - SUPPORTING MATERIAL

Overview	C2-3
Loss Cost/Rate Level Histories (Tables 13 - 17)	C4-14
Commercial Package Policy Implicit Package Modification Factors (IPMF's) and IPMF Caps (Tables 18 - 20)	C15-19
Trend Procedure (Tables 21 - 27)	C20-42
Loss Development Procedure (Table 28)	C43-47
Excess Loss Procedure (Tables 29 - 32)	C48-61
Credibility (Tables 33, 33A, and 34)	C62-67

OVERVIEW

AGGREGATE LOSS COSTS AT CURRENT LEVEL

Tables 13, 14 and 15 provide the overall loss cost/rate level histories for Basic Group I, Basic Group II, and Special Causes of Loss respectively. These tables, along with Tables 16 and 17, provide information on the on-level factors needed to bring collected aggregate loss costs to current loss cost level.

Table 16 provides rate level/loss cost level histories by rating id (class vs. specific), rating group, and territory (where applicable) for Basic Group I, while Table 17 provides rate level/loss cost level histories by category for Special Causes of Loss. These tables can be used to develop on-level factors appropriate to bring collected aggregate loss costs up to current loss cost level. Factors based on these tables are more appropriate for company use than the overall factors shown on Tables 13 and 15 if the company's mix of business differs substantially from the industrywide average. For example, if a company's business is very heavily concentrated in a single class or territory, it is more appropriate to use the rate level/loss cost history for that class rather than the overall average to develop on-level factors.

Tables 18, 19 and 20 provide the current implicit package modification factors (IPMFs) and IPMF caps for Basic Group I, Basic Group II and Special Causes of Loss.

ADJUSTMENTS TO LOSSES

The loss projection factors, current cost factors, and loss trend adjustments shown on Tables 21, 22 and 23 reflect the combined impact of all economic influences on Commercial Property underwriting results and are used to project past underwriting results to future loss levels. They are intended to reflect the impact of inflation on loss payments, the impact of higher costs due to repairs done on an "emergency" basis, the impact of coinsurance and relative insurance to value on loss payments, and any other economic influences which can affect underwriting losses but for which specific provisions are not made. Losses have also been developed to their ultimate settlement value using factors shown on Table 28.

CREDIBILITY

Credibility, Z , is a weight given to the most recent body of data. The complement of credibility, $1-Z$, is the weight assigned to net trend. The final estimate is a weighted average obtained by using the formula $C = Z \times R + (1-Z) \times N$, where

Z = credibility

C = final estimate

R = estimate based on the most recent data

N = net trend

OVERVIEW (cont'd)

CREDIBILITY (cont'd)

Credibility may range from 0 to 1, where $Z=1$ is full credibility and $Z=0$ is no credibility. The actual numerical value of Z is calculated by considering how the state's volume of experience compares with the full credibility standard. Credibility is capped at 25% if the credibility calculated is less than 25%. See Tables 33, 33A, and 34 for a complete explanation of the credibility standards for Basic Group I, Basic Group II, and Special Causes of Loss.

LOSS COST/RATE LEVEL HISTORY

Loss cost/rate level histories are provided for Basic Group I, Basic Group II and Special Causes of Loss. The loss cost/rate level changes are then further split out by rating territory, rating group or category since a company's business may be more heavily concentrated in a single class. These histories can be used to develop on-level factors appropriate to bring collected aggregate loss costs up to current loss cost levels.

KENTUCKY

TABLE 13

BASIC GROUP I

HISTORY OF STATEWIDE LOSS COST/RATE LEVEL CHANGES

LOSS COST/RATE LEVEL HISTORY				
(1)	(2)	(3)	(4)	(5)
EFFECTIVE DATE	LOSS COST/ RATE LEVEL CHANGE (%)	LOSS COST/ RATE LEVEL INDEX	ADJUSTMENT FACTOR	WEIGHT*
2000-07-01	-8.7	0.913	0.770	0.504
2001-10-01	3.9	0.949	0.741	0.252
2003-11-01	4.5	0.991	0.709	0.167
2004-09-01	-9.6	0.896	0.785	0.333
2006-02-01	-12.8	0.781	0.900	0.915
2009-01-01	-9.2	0.710	0.990	1.000
2010-02-01	-8.4	0.650	1.082	0.915
2012-02-01	-7.2	0.603	1.166	0.915
2013-02-01	9.7	0.662	1.062	0.915
2014-02-01	7.1	0.709	0.992	0.915
2016-02-01	0.0	0.709	0.992	0.915
2017-04-01	-0.8	0.703	1.000	0.753

TIME ELEMENT ONLY LOSS COST LEVEL HISTORY				
(1)	(2)	(3)	(4)	(5)
EFFECTIVE DATE	LOSS COST/ RATE LEVEL CHANGE (%)	LOSS COST/ RATE LEVEL INDEX	ADJUSTMENT FACTOR	WEIGHT*
2013-04-01	-13.1	0.869	1.000	0.753

* WEIGHT DENOTES THE PORTION OF THE EFFECTIVE YEAR FOR WHICH THE ADJUSTMENT FACTORS APPLY.

KENTUCKY

TABLE 14

BASIC GROUP II

HISTORY OF STATEWIDE LOSS COST/RATE LEVEL CHANGES

LOSS COST/RATE LEVEL HISTORY				
(1)	(2)	(3)	(4)	(5)
EFFECTIVE DATE	LOSS COST/ RATE LEVEL CHANGE (%)	LOSS COST/ RATE LEVEL INDEX	ADJUSTMENT FACTOR	WEIGHT*
2000-07-01	-2.2	0.978	1.451	0.504
2001-10-01	3.6	1.013	1.401	0.252
2003-11-01	-3.6	0.977	1.452	0.167
2004-09-01	3.4	1.010	1.405	0.333
2006-02-01	9.4	1.105	1.284	0.915
2009-01-01	0.0	1.105	1.284	1.000
2010-02-01	2.8	1.136	1.249	0.915
2012-02-01	-1.0	1.124	1.262	0.915
2013-02-01	2.4	1.151	1.233	0.915
2014-02-01	8.3	1.247	1.138	0.915
2016-02-01	8.6	1.354	1.048	0.915
2017-04-01	4.8	1.419	1.000	0.753

TIME ELEMENT ONLY LOSS COST LEVEL HISTORY				
(1)	(2)	(3)	(4)	(5)
EFFECTIVE DATE	LOSS COST/ RATE LEVEL CHANGE (%)	LOSS COST/ RATE LEVEL INDEX	ADJUSTMENT FACTOR	WEIGHT*
2013-04-01	-13.3	0.867	1.000	0.753

* WEIGHT DENOTES THE PORTION OF THE EFFECTIVE YEAR FOR WHICH THE ADJUSTMENT FACTORS APPLY.

KENTUCKY

TABLE 15

SPECIAL CAUSES OF LOSS

HISTORY OF STATEWIDE LOSS COST/RATE LEVEL CHANGES

LOSS COST/RATE LEVEL HISTORY				
(1)	(2)	(3)	(4)	(5)
EFFECTIVE DATE	LOSS COST/RATE LEVEL CHANGE (%)	LOSS COST/RATE LEVEL INDEX	ADJUSTMENT FACTOR	WEIGHT*
2000-07-01	6.4	1.064	1.180	0.504
2001-10-01	4.5	1.112	1.129	0.252
2003-11-01	3.0	1.145	1.096	0.167
2004-09-01	-2.4	1.118	1.123	0.333
2006-02-01	11.0	1.241	1.011	0.915
2009-01-01	-9.3	1.125	1.116	1.000
2010-02-01	0.0	1.125	1.116	0.915
2012-02-01	-10.8	1.004	1.250	0.915
2013-02-01	-4.5	0.959	1.309	0.915
2014-02-01	8.5	1.040	1.207	0.915
2016-02-01	9.7	1.141	1.100	0.915
2017-04-01	10.0	1.255	1.000	0.753

TIME ELEMENT ONLY LOSS COST LEVEL HISTORY				
(1)	(2)	(3)	(4)	(5)
EFFECTIVE DATE	LOSS COST/RATE LEVEL CHANGE (%)	LOSS COST/RATE LEVEL INDEX	ADJUSTMENT FACTOR	WEIGHT*
2013-04-01	-25.0	0.750	1.000	0.753

* WEIGHT DENOTES THE PORTION OF THE EFFECTIVE YEAR FOR WHICH THE ADJUSTMENT FACTORS APPLY.

EXPLANATORY NOTES TO TABLES 13, 14 AND 15

LOSS COST/RATE LEVEL HISTORIES

COLUMN (1)

EFFECTIVE DATE

The effective dates of the latest loss cost/rate level changes are shown.

COLUMN (2)

LOSS COST/RATE LEVEL CHANGE

The overall loss cost/rate level change is shown in percent form.

COLUMN (3)

LOSS COST/RATE LEVEL INDEX

The product of all loss cost/rate level changes up to and including the loss cost/rate change for that effective date is used to calculate on level factors.

COLUMN (4)

WRITTEN ADJUSTMENT (ON LEVEL) FACTORS

The factors are used to bring individual policies with inception dates prior to the effective date up to current loss cost level. For Basic Group II these are the actual factors used. However, the loss cost/rate changes for Basic Group I vary by rating group and territory (where applicable), while the loss cost/rate level changes for Special Causes of Loss vary by category. Consequently, for these coverages the on-level factors represent average factors and are not the factors actually used to adjust the aggregate loss costs on an individual policy basis. For complete loss cost/rate level histories by rating group and territory (where applicable) for Basic Group I and by category for Special Causes of Loss refer to Tables 16 and 17.

COLUMN (5)

WEIGHT

The weight indicates the portion of the effective year for which the on level factors apply. These can be used to calculate average yearly factors.

KENTUCKY
TABLE 16

HISTORY OF BASIC GROUP I

LOSS COST CHANGES BY TERRITORY, RATING ID AND RATING GROUP

TERRITORY: Louisville

EFFECTIVE DATE	RATING ID	RATING GROUP																				
		01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	17	18	19	20	21	22
02-01-2006	SPEC.	-28.6	-29.6	-32.5	-32.5	-31.6	-29.4	-30.9	-30.0	-31.4	-31.5	-31.7	-32.5	-30.9	-32.5	-32.5	-32.5	-32.2	-32.0	-32.0	-32.5	-32.5
	CLASS	-9.9	-11.2	-16.3	-15.6	-13.7	-11.0	-12.9	-11.7	-13.4	-13.6	-13.9	-14.9	-12.9	-14.9	-15.1	-14.9	-32.2	-14.3	-32.0	-32.5	-17.5
01-01-2009	SPEC.	-7.3	-12.0	-18.8	-15.4	-15.1	-9.2	-15.0	-15.5	-17.5	-29.2	-15.3	-15.2	-17.1	-15.4	-19.4	-15.2	-13.8	-14.2	-15.4	-13.8	-16.9
	CLASS	-6.7	-11.4	-18.3	-14.8	-14.5	-8.5	-14.4	-14.9	-16.9	-29.2	-14.7	-14.6	-16.5	-14.8	-18.9	-14.6	-13.8	-13.6	-15.4	-13.8	-16.3
02-01-2010	SPEC.	6.1	1.4	-7.9	1.0	-3.4	-5.1	-9.9	-3.8	-4.3	-12.5	-2.1	-2.3	-2.6	-2.3	-8.1	-3.1	-1.3	-2.0	-3.3	-2.0	-3.5
	CLASS	-4.8	-9.1	-17.4	-9.4	-13.4	-14.9	-19.2	-13.8	-14.2	-21.5	-12.2	-12.4	-12.6	-12.4	-17.6	-13.1	-1.3	-12.1	-3.3	-2.0	-13.5
02-01-2012	SPEC.	6.5	6.4	9.1	6.7	4.9	10.6	2.1	0.3	2.4	2.9	5.3	4.1	7.6	4.1	3.2	3.9	5.6	5.4	4.4	3.3	3.1
	CLASS	-3.1	-3.2	-0.8	-2.9	-4.6	0.7	-7.1	-8.7	-6.8	-6.4	-4.2	-5.3	-2.1	-5.3	-6.1	-5.5	5.6	-4.1	4.4	3.3	-6.2
02-01-2013	SPEC.	-1.6	0.7	-0.4	7.3	0.9	3.8	-2.5	-2.7	-0.1	-1.1	1.6	-0.3	4.4	-0.3	-1.4	0.7	2.3	1.4	0.9	0.1	0.6
	CLASS	9.6	12.1	10.8	19.4	12.3	15.6	8.6	8.3	11.2	10.0	13.1	10.9	16.3	10.9	9.7	12.1	2.3	12.9	0.9	0.1	12.0
02-01-2014	SPEC.	-18.6	-15.4	-16.2	-10.8	-13.3	-7.0	-20.0	-17.1	-16.7	-16.8	-14.1	-16.9	-13.9	-16.9	-20.0	-15.1	-15.6	-14.6	-15.2	-13.7	-14.3
	CLASS	2.9	6.9	5.9	12.6	9.6	17.5	-5.5	4.7	5.3	5.2	8.6	5.1	8.8	5.1	0.9	7.3	-15.6	8.0	-15.2	-13.7	8.3
02-01-2016	SPEC.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	CLASS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
04-01-2017	SPEC.	-16.6	-16.6	-1.3	10.1	-12.6	-16.6	-16.6	-16.6	-12.4	-15.2	-12.6	-16.6	-9.3	-16.6	-11.5	-10.6	-11.1	-10.6	-11.7	-7.2	-10.6
	CLASS	-16.6	-16.6	-1.3	10.1	-12.6	-16.6	-16.6	-16.6	-12.4	-15.2	-12.6	-16.6	-9.3	-16.6	-11.5	-10.6	-11.1	-10.6	-11.7	-7.2	-10.6

KENTUCKY
TABLE 16

HISTORY OF BASIC GROUP I

LOSS COST CHANGES BY TERRITORY, RATING ID AND RATING GROUP

TERRITORY: Lexington-Fayette

EFFECTIVE DATE	RATING ID	RATING GROUP																				
		01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	17	18	19	20	21	22
02-01-2006	SPEC.	-28.9	-29.9	-32.8	-32.8	-31.9	-29.8	-31.3	-30.3	-31.7	-31.8	-32.0	-32.8	-31.3	-32.8	-32.8	-32.8	-32.5	-32.3	-32.3	-32.8	-32.8
	CLASS	-10.3	-11.6	-16.7	-16.0	-14.1	-11.4	-13.3	-12.1	-13.8	-14.0	-14.2	-15.3	-13.3	-15.3	-15.4	-15.3	-32.5	-14.7	-32.3	-32.8	-17.8
01-01-2009	SPEC.	0.3	-4.8	-12.2	-8.4	-8.1	-1.7	-8.1	-8.6	-10.7	-23.4	-8.3	-8.2	-10.3	-8.4	-12.8	-8.2	-6.7	-7.1	-8.5	-6.7	-10.1
	CLASS	1.0	-4.1	-11.6	-7.8	-7.5	-1.0	-7.4	-8.0	-10.1	-23.4	-7.7	-7.6	-9.6	-7.8	-12.2	-7.6	-6.7	-6.5	-8.5	-6.7	-9.4
02-01-2010	SPEC.	18.1	12.9	2.5	12.4	7.5	5.7	0.3	7.1	6.5	-2.6	9.0	8.8	8.5	8.8	2.3	7.8	9.9	9.1	7.6	9.1	7.4
	CLASS	5.9	1.2	-8.1	0.8	-3.6	-5.3	-10.1	-4.0	-4.5	-12.7	-2.3	-2.5	-2.8	-2.5	-8.2	-3.3	9.9	-2.2	7.6	9.1	-3.7
02-01-2012	SPEC.	10.1	10.0	12.7	10.3	8.4	14.3	5.5	3.7	5.9	6.3	8.8	7.6	11.2	7.6	6.6	7.4	9.1	8.9	7.9	6.7	6.5
	CLASS	0.2	0.1	2.5	0.4	-1.4	4.0	-4.0	-5.7	-3.7	-3.3	-1.0	-2.1	1.2	-2.1	-3.0	-2.3	9.1	-0.9	7.9	6.7	-3.1
02-01-2013	SPEC.	-0.1	2.2	1.1	8.9	2.4	5.4	-1.0	-1.2	1.4	0.4	3.1	1.2	6.0	1.2	0.0	2.2	3.9	2.9	2.4	1.6	2.1
	CLASS	11.3	13.8	12.5	21.2	14.0	17.3	10.2	10.0	12.9	11.7	14.8	12.6	18.0	12.6	11.4	13.8	3.9	14.6	2.4	1.6	13.7
02-01-2014	SPEC.	-11.4	-8.0	-8.8	-2.9	-5.6	1.3	-12.9	-9.8	-9.3	-9.4	-6.5	-9.5	-6.3	-9.5	-13.1	-7.6	-8.1	-7.0	-7.7	-6.1	-6.7
	CLASS	12.0	16.2	15.2	22.6	19.2	27.9	2.8	13.9	14.5	14.4	18.1	14.2	18.4	14.2	9.9	16.7	-8.1	17.4	-7.7	-6.1	17.8
02-01-2016	SPEC.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	CLASS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
04-01-2017	SPEC.	-25.6	-25.6	-11.9	-1.8	-22.1	-25.6	-25.6	-25.6	-21.9	-24.4	-22.1	-25.6	-19.1	-25.6	-21.0	-20.3	-20.6	-20.3	-21.2	-17.3	-20.3
	CLASS	-25.6	-25.6	-11.9	-1.8	-22.1	-25.6	-25.6	-25.6	-21.9	-24.4	-22.1	-25.6	-19.1	-25.6	-21.0	-20.3	-20.6	-20.3	-21.2	-17.3	-20.3

KENTUCKY
TABLE 16

HISTORY OF BASIC GROUP I

LOSS COST CHANGES BY TERRITORY, RATING ID AND RATING GROUP

TERRITORY: Balance of State (Kentucky)

EFFECTIVE DATE	RATING ID	RATING GROUP																				
		01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	17	18	19	20	21	22
02-01-2006	SPEC.	-18.1	-19.3	-22.6	-22.6	-21.5	-19.1	-20.8	-19.7	-21.3	-21.5	-21.7	-22.6	-20.8	-22.6	-22.6	-22.6	-22.2	-22.1	-22.1	-22.6	-22.6
	CLASS	3.3	1.8	-4.0	-3.2	-1.0	2.0	-0.1	1.2	-0.7	-0.9	-1.2	-2.4	-0.1	-2.4	-2.6	-2.4	-22.2	-1.7	-22.1	-22.6	-5.5
01-01-2009	SPEC.	-0.4	-5.4	-12.8	-9.1	-8.8	-2.4	-8.7	-9.2	-11.3	-23.9	-9.0	-8.9	-10.9	-9.1	-13.4	-8.9	-7.3	-7.8	-9.1	-7.3	-10.7
	CLASS	0.3	-4.7	-12.2	-8.4	-8.1	-1.7	-8.0	-8.6	-10.7	-23.9	-8.3	-8.2	-10.2	-8.4	-12.8	-8.2	-7.3	-7.1	-9.1	-7.3	-10.1
02-01-2010	SPEC.	6.5	1.7	-7.6	1.3	-3.1	-4.8	-9.6	-3.5	-4.0	-12.2	-1.8	-2.0	-2.3	-2.0	-7.8	-2.8	-1.0	-1.7	-3.0	-1.7	-3.2
	CLASS	-4.5	-8.8	-17.1	-9.2	-13.1	-14.6	-19.0	-13.5	-13.9	-21.3	-11.9	-12.1	-12.4	-12.1	-17.3	-12.9	-1.0	-11.8	-3.0	-1.7	-13.2
02-01-2012	SPEC.	-3.3	-3.4	-1.0	-3.1	-4.8	0.5	-7.3	-8.9	-7.0	-6.6	-4.4	-5.5	-2.3	-5.5	-6.3	-5.6	-4.1	-4.3	-5.2	-6.2	-6.4
	CLASS	-12.0	-12.1	-9.9	-11.8	-13.4	-8.6	-15.6	-17.1	-15.4	-15.0	-13.0	-14.0	-11.1	-14.0	-14.8	-14.2	-4.1	-12.9	-5.2	-6.2	-14.8
02-01-2013	SPEC.	-0.1	2.2	1.1	8.9	2.4	5.4	-1.0	-1.2	1.4	0.4	3.1	1.2	6.0	1.2	0.0	2.2	3.9	2.9	2.4	1.6	2.1
	CLASS	11.3	13.8	12.5	21.2	14.0	17.3	10.2	10.0	12.9	11.7	14.8	12.6	18.0	12.6	11.4	13.8	3.9	14.6	2.4	1.6	13.7
02-01-2014	SPEC.	-11.5	-8.0	-8.9	-3.0	-5.7	1.2	-13.0	-9.9	-9.4	-9.5	-6.6	-9.6	-6.4	-9.6	-13.2	-7.7	-8.2	-7.1	-7.8	-6.2	-6.8
	CLASS	11.9	16.1	15.1	22.5	19.1	27.7	2.7	13.8	14.4	14.3	18.0	14.1	18.2	14.1	9.8	16.6	-8.2	17.3	-7.8	-6.2	17.7
02-01-2016	SPEC.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	CLASS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
04-01-2017	SPEC.	-5.8	-5.8	11.4	24.4	-1.3	-5.8	-5.8	-5.8	-1.0	-4.2	-1.3	-5.8	2.4	-5.8	0.0	1.0	0.4	1.0	-0.3	4.8	1.0
	CLASS	-5.8	-5.8	11.4	24.4	-1.3	-5.8	-5.8	-5.8	-1.0	-4.2	-1.3	-5.8	2.4	-5.8	0.0	1.0	0.4	1.0	-0.3	4.8	1.0

EXPLANATORY NOTES TO TABLE 16

HISTORY OF BASIC GROUP I LOSS COST/RATE CHANGES
BY TERRITORY, RATING ID AND RATING GROUP

TERRITORY

The loss cost/rate level changes shown apply to the rating territory shown here.

EFFECTIVE DATE

The effective dates of the latest loss cost/rate level changes are shown.

LOSS COST/RATE LEVEL CHANGES

Loss cost/rate level changes are shown in percent form for each rating group.

KENTUCKY
TABLE 17

SPECIAL CAUSES OF LOSS

HISTORY OF LOSS COST/RATE LEVEL CHANGES BY CATEGORY

(1) EFFECTIVE DATE	(2) CATEGORY													
	01	02	03	04	05	06	07	08	09	10	11	12	13	14
02-01-2006	11.5	7.2	17.1	5.4	11.7									
01-01-2009	-12.0	-14.1	-8.3	8.5	1.6									
02-01-2010	-1.5	-5.8	-0.7	9.6	5.1									
02-01-2012	-10.6	-10.8	-10.6	-6.2	-6.6	-10.0	-9.9	-13.9	-12.8	-9.7	-11.7	-8.8	-11.6	-9.7
02-01-2013	-3.8	-6.4	-5.2	-3.9	2.3	-4.2	-4.2	-12.2	-7.9	-5.4	-5.5	-5.3	-6.0	-3.6
02-01-2014	8.9	7.8	4.0	8.2	8.8	7.6	8.3	11.0	5.9	7.7	7.5	6.4	6.7	7.9
02-01-2016	11.6	9.4	7.6	9.8	11.7	6.7	7.3	2.6	6.1	8.8	9.8	3.8	6.5	9.0
04-01-2017	8.8	12.7	9.6	10.0	13.1	9.6	9.6	20.3	8.4	10.4	9.4	5.4	8.3	10.4

EXPLANATORY NOTES TO TABLE 17

HISTORY OF SPECIAL CAUSES OF LOSS
LOSS COST/RATE LEVEL CHANGES BY CATEGORY

COLUMN (1)

EFFECTIVE DATE

The effective dates of the latest loss cost/rate level changes are shown.

COLUMN (2)

LOSS COST/RATE LEVEL CHANGES BY CATEGORY

Loss cost/rate changes are shown in percent form for each category. Refer to Table 37 for definitions of the current 14 categories.

The prior category definitions (before implementation of the revised rating for Special Causes of Loss) are:

- 01 - Buildings
- 02 - Apartments Contents
- 03 - Office Contents
- 04 - Mercantile, Motel/Hotel and Institutional Contents
- 05 - Service, Industrial/Processing, and Contractors Contents

COMMERCIAL PACKAGE POLICY IMPLICIT PACKAGE MODIFICATION FACTORS (IPMF's)
AND IPMF CAPS

IMPLICIT PACKAGE
MODIFICATION
FACTORS

Since multiline experience is included in the loss cost level evaluations, an additional adjustment is made to multiline aggregate loss costs after they have been brought to current ISO loss cost level. This adjustment is the application of implicit CPP package modification factors which vary for each of the eight CPP types of policy.

The loss costs used to price a Commercial Package Policy (CPP) are the monoline loss costs multiplied by the PMF to reflect the package policy discount for the particular type of CPP policy relative to the individual monoline policies. However, these PMF's measure the amount of multiline discount for all property coverages combined. A more accurate measure of the amount of multiline discount for each subline (e.g., Basic Group I, Basic Group II, or Special Causes of Loss) is the implicit package modification factor that was used to calculate the overall PMF for all property coverages combined.

For example, the published PMF for Apartments (all property coverages combined) may be .85, but the implicit PMF for Apartments, Commercial Basic Group I coverage only, may be .80. The average of the implicit PMF's for the various coverages is equal to the published PMF for each type of policy.

The current IPMF's by coverage for each CPP type of policy are applied to multiline aggregate loss costs at current level for Basic Group I, Basic Group II and Special Causes of Loss.

IPMF CAPS

For Basic Group I, Basic Group II, and Special Causes of Loss, the IPMF's lower caps are set at 0.50 and the upper caps are set at 1.50 for all TOP's.

KENTUCKY
 TABLE 18
 BASIC GROUP I IMPLICIT PACKAGE
 MODIFICATION FACTORS (IPMFS) AND IPMF CAPS

CPP IMPLICIT PACKAGE MODIFICATION FACTORS (IPMFS) AND IPMF CAPS

TOP	DESCRIPTION	IPMF	LOW CAP	HIGH CAP

31	MOTEL/HOTEL	1.000	0.500	1.500
32	APARTMENT	0.875	0.500	1.500
33	OFFICE	0.792	0.500	1.500
34	MERCANTILE	0.767	0.500	1.500
35	INSTITUTIONAL	0.975	0.500	1.500
36	SERVICES	0.842	0.500	1.500
37	INDUST/PROCESSING	1.021	0.500	1.500
38	CONTRACTORS	0.854	0.500	1.500

KENTUCKY
 TABLE 19
 BASIC GROUP II IMPLICIT PACKAGE
 MODIFICATION FACTORS (IPMFS) AND IPMF CAPS

CPP IMPLICIT PACKAGE MODIFICATION FACTORS (IPMFS) AND IPMF CAPS

TOP	DESCRIPTION	IPMF	LOW CAP	HIGH CAP
31	MOTEL/HOTEL	1.117	0.500	1.500
32	APARTMENT	1.028	0.500	1.500
33	OFFICE	0.763	0.500	1.500
34	MERCANTILE	0.980	0.500	1.500
35	INSTITUTIONAL	0.773	0.500	1.500
36	SERVICES	1.054	0.500	1.500
37	INDUST/PROCESSING	0.699	0.500	1.500
38	CONTRACTORS	1.074	0.500	1.500

KENTUCKY
 TABLE 20
 SPECIAL CAUSES OF LOSS IMPLICIT PACKAGE
 MODIFICATION FACTORS (IPMFS) AND IPMF CAPS

CPP IMPLICIT PACKAGE MODIFICATION FACTORS (IPMFS) AND IPMF CAPS

TOP	DESCRIPTION	IPMF	LOW CAP	HIGH CAP

31	MOTEL/HOTEL	0.861	0.500	1.500
32	APARTMENT	0.896	0.500	1.500
33	OFFICE	0.836	0.500	1.500
34	MERCANTILE	0.822	0.500	1.500
35	INSTITUTIONAL	0.621	0.500	1.500
36	SERVICES	0.925	0.500	1.500
37	INDUST/PROCESSING	0.627	0.500	1.500
38	CONTRACTORS	0.957	0.500	1.500

EXPLANATORY NOTES TO TABLES 18, 19, AND 20

IMPLICIT PACKAGE MODIFICATION
FACTORS (IPMF's) AND IPMF CAPS

TABLES 18, 19,
AND 20

These tables provide the current IPMF's and IPMF caps for Basic Group I, Basic Group II, and Special Causes of Loss. The IPMF's shown here are those which resulted from the most recent CPP revision. The IPMF lower caps are set at .50 and the upper caps are set at 1.50 for all TOP's.

TREND PROCEDURE

INTRODUCTION

The prospective loss cost levels established in this document reflect the anticipated claim cost and claim frequency levels and changes in revenue due to increased amounts of insurance purchased for the period when the new loss costs are assumed to be in effect.

LOSS TREND

EXTERNAL LOSS DATA

For Commercial Property, the loss trend factors are referred to as current cost factors (CCF's) and loss projection factors (LPF's). These CCF's and LPF's are based on the following accepted economic indices:

1. Xactware Commercial Index (XCI) for buildings loss projection factors and current cost factors
2. Producer Price Index (PPI) published by the US Department of Labor (Finished Goods Less Energy, Not Seasonally Adjusted) for contents factors
3. Index for Manufacturers' Sales Exposure (IMSEP) developed by ISO using indices published by the Department of Commerce and Chain-Type Price Index for Retail Sales (RSALES) produced by the Bureau of the Census, Bureau of Economic Analysis for time element factors

The CCF's adjust losses for actual inflationary changes which have taken place between the accident date and the midpoint of the latest period of external trend information, i.e. February 15, 2019 for property damage and time element. The LPF's adjust losses for projected inflationary changes from the midpoint of the latest period of external trend information to the anticipated average date of accident for policies written under the proposed loss costs (assumed to be 12 months after the assumed revision date based on all one-year policies).

The CCF's and LPF's are calculated separately for buildings, contents, and time element coverages. For coverage 3 (buildings and contents on a combined basis), combined trend factors are calculated using the following weights for buildings and contents: 70%/30% for Basic Group I, 75%/25% for Basic Group II, and 50%/50% for Special Causes of Loss. For time element (coverages 4-9) the combined trend factors are calculated using 70%/30% weights for RSALES/IMSEP. The factors are applied by coverage to the losses reported under CSP and CMSP on an individual occurrence basis.

TREND PROCEDURE (cont'd)

LOSS TREND (cont'd)

LOSS TREND ADJUSTMENT - SEVERITY

An evaluation of the latest Commercial Property insurance data shows that the cost levels inherent in the property damage coverages are increasing at a different rate than those measured by the external indices. Therefore, to insure adequate prospective loss cost levels during the period for which loss costs are to be determined, loss trend adjustments (LTA's) have been applied. These factors were developed by comparing the annual rate of change in average claim costs to the annual rate of change in the external indices. (Refer to Table 23 for the calculations.)

LOSS TREND ADJUSTMENT - FREQUENCY

In order to reflect total trend more precisely, a frequency component is included in the loss trend adjustment factors (LTA's) separately for buildings and contents for Basic Group I and contents only for Special Causes of Loss. No frequency component is used for Basic Group II and Special Causes of Loss buildings due to the extremely volatile nature of the coverages.

AMOUNT-OF- INSURANCE TREND

Cost changes over time to both real and personal property result in insureds purchasing increased amounts of insurance. To reflect the impact of this phenomenon, amount of insurance trend factors are applied to collected loss costs to bring them to prospective amount of insurance levels. These factors are developed by measuring amount of insurance trends on a sample of renewal policies.

The application and development of these factors parallels loss trend factors in that separate factors are developed for buildings, contents, and time element, and the adjustment to prospective amount of insurance levels is done in two steps. The current written factors adjust loss costs to the amount of insurance level for the midpoint of the latest period of renewal information, i.e. July 1, 2018. Total amount of insurance trend factors are then calculated by projecting these current factors to the average date of writing (i.e. to the amount of insurance level six months beyond the assumed effective date).

TABLE 21

Development of Current Cost Factors and Loss Projection Factors
For Commercial Property Building and Contents Experience
 Period ending March 31, 2019

Part A: Quarterly Indices for Buildings, Contents and Time Element

Building Loss Projection Factors - Xactware Commercial Index (XCI) (Base: 2009 = 100.0)
 Contents - Producer Price Index (PPI) - U.S. Dept. of Labor (Finished Goods Less Energy) (Base: 2009 = 100.0)
 Time Element Combined Index - Weighted average of IMSEP and RSALES indices ^(a)

<u>Quarter</u>	<u>XCI</u>	<u>PPI</u>	<u>IMSEP</u>	<u>RSALES</u>	<u>Time Element Combined Index</u>
Q2-2016	110.7	114.3	1.031	0.955	0.978
Q3-2016	111.3	114.3	1.029	0.953	0.976
Q4-2016	111.9	114.6	1.033	0.956	0.979
Q1-2017	112.7	115.5	1.038	0.963	0.986
Q2-2017	114.0	116.5	1.036	0.957	0.981
Q3-2017	115.0	116.3	1.042	0.959	0.984
Q4-2017	115.5	117.1	1.044	0.965	0.989
Q1-2018	116.6	117.6	1.048	0.971	0.994
Q2-2018	117.5	118.1	1.055	0.974	0.998
Q3-2018	118.4	118.3	1.059	0.974	1.000
Q4-2018	118.8	119.6	1.059	0.972	0.998
Q1-2019	119.8	120.4	1.058	0.967	0.994

Part B: Computation of Loss Projection Factor (LPF) for Buildings based on 12 points

$$\text{Annual Rate of Change} = 0.0303 = 3.03\% \quad R^2 = 0.995$$

$$\text{Loss Projection Factor for Buildings} = 1.0303^{22.5/12 (b)} = 1.0576$$

Part C: Computation of Loss Projection Factor (LPF) for Contents based on 12 points

$$\text{Annual Rate of Change} = 0.0190 = 1.9\% \quad R^2 = 0.974$$

$$\text{Loss Projection Factor for Contents} = 1.019^{22.5/12 (b)} = 1.0359$$

Part D: Computation of Loss Projection Factor (LPF) for Time Element Based on 12 points

$$\text{Annual Rate of Change} = 0.0089 = 0.89\% \quad R^2 = 0.843$$

$$\text{Loss Projection Factor for Time Element} = 1.0089^{22.5/12 (b)} = 1.0168$$

- (a) 30% weight for IMSEP and 70% weight for RSALES. IMSEP & RSALES indices were rescaled to a 2012 year base.
- (b) Assuming a rate or loss cost revision date of January 1 2020, and all one year policies, the time interval between the midpoint of the latest period (02/15/2019) and the average date of accident (01/01/2021) would be 22.5 months.

TABLE 21

Development of Current Cost Factors and Loss Projection Factors

Part E: Calculation of Current Cost Factors (CCF)

<u>Year</u>	<u>Calendar Year Averages</u>			<u>Current Cost Factors Based on Average Index Values for Period ending March 31, 2019</u>		
	<u>XCI</u>	<u>PPI</u>	<u>Time Element Index</u>	<u>Buildings</u>	<u>Contents</u>	<u>Time Element</u>
2008	97.0	98.5	0.948	119.8 / 97.0 = 1.236	120.4 / 98.5 = 1.222	0.994 / 0.948 = 1.049
2009	100.0	100.0	0.940	119.8 / 100.0 = 1.198	120.4 / 100.0 = 1.204	0.994 / 0.940 = 1.057
2010	99.3	101.8	0.953	119.8 / 99.3 = 1.207	120.4 / 101.8 = 1.183	0.994 / 0.953 = 1.043
2011	100.0	105.2	0.985	119.8 / 100.0 = 1.198	120.4 / 105.2 = 1.144	0.994 / 0.985 = 1.009
2012	101.0	108.0	1.000	119.8 / 101.0 = 1.186	120.4 / 108.0 = 1.115	0.994 / 1.000 = 0.994
2013	102.7	109.7	1.003	119.8 / 102.7 = 1.167	120.4 / 109.7 = 1.097	0.994 / 1.003 = 0.991
2014	104.7	112.5	1.006	119.8 / 104.7 = 1.144	120.4 / 112.5 = 1.070	0.994 / 1.006 = 0.988
2015	109.1	113.8	0.987	119.8 / 109.1 = 1.098	120.4 / 113.8 = 1.058	0.994 / 0.987 = 1.007
2016	111.1	114.4	0.977	119.8 / 111.1 = 1.078	120.4 / 114.4 = 1.052	0.994 / 0.977 = 1.017
2017	114.3	116.4	0.985	119.8 / 114.3 = 1.048	120.4 / 116.4 = 1.035	0.994 / 0.985 = 1.009
2018	117.8	118.4	0.998	119.8 / 117.8 = 1.017	120.4 / 118.4 = 1.017	0.994 / 0.998 = 0.996

EXPLANATORY NOTES TO TABLE 21

PART A: XACTWARE, PRODUCER PRICE, IMSEP, RSALES INDICES AND COMBINED TIME ELEMENT

QUARTER	The quarter for which the indices shown apply.
XACTWARE COMMERCIAL INDEX (XCI)	The Xactware Commercial Index measures the costs of building material and repairs for commercial properties. The index, which is available since 1st Quarter 2005, is based on regular surveys of over 42,000 material and equipment suppliers and over 9,500 contractors, in addition to claims settlement data. The index values are created by estimating the cost to rebuild a sample set of different structures ranging in size, style, and quality in each economic market. The Xactware index is used in this filing to adjust for current cost from 1/1/05 to the midpoint of the latest index point and for determining the loss projection factor.
PRODUCER PRICE INDEX (PPI)	The Producer Price Index is a time series which measures the price level for a predetermined group of goods produced relative to the price level for an earlier point in time (2009). The PPI Finished Goods Less Energy is published by the U.S. Department of Labor.
PRICE DEFLATOR INDEX FOR MANUFACTURERS' SALES EXPOSURE (IMSEP)	The price deflator index for manufacturers' sales exposure is a quarter's model of Manufacturers' Sales Exposure Proxy (MSEP) for the period in question relative to MSEP measured in chained 2012 dollars. The price deflator is defined as the GNP (Gross National Product) price deflator with government expenditures, investment in intellectual property products, inventory changes, and all services except food services removed. $\text{MSEP} = (\text{CD} + \text{CN} + \text{FS}) + (\text{EXD\&N} - \text{IMD\&N}) + (\text{IFIX} - \text{IPP}), \text{ where}$ CD and CN represent consumption of durables and nondurables, respectively; EXD&N and IMD&N represent exports and imports of merchandise, respectively; FS represents food services and IFIX represents gross private domestic fixed investment (including residential fixed investment as well as nonresidential fixed investment in structures, equipment, and intellectual property products); and IPP represents nonresidential fixed investment in intellectual property products.
CHAIN-TYPE PRICE INDEX FOR RETAIL SALES (RSALES)	The Chain-Type Price Index for Retail Sales measures changes in losses due solely to inflation.

EXPLANATORY NOTES TO TABLE 21 (cont'd)

PARTS B, C and D: COMPUTATION OF THE LOSS PROJECTION FACTOR

LOSS PROJECTION
FACTOR

The loss projection factor is calculated by fitting a least squares exponential curve to the appropriate number of points (where the appropriate number of points is determined based on judgment and an examination of the goodness of fit as determined by the R-squared values subject to a maximum of 12 quarterly points for property damage and time element).

The table displays the indices for those points used in fitting the curve. The relevant equations are shown and the annual rate of change in the indices based on the exponential fit is developed. This annual rate of change is projected over the period which extends from the latest period of cost information to the average accident date of the projection period.

PART E: CALCULATION OF CURRENT COST FACTORS (CCF'S)

CALENDAR YEAR
AVERAGES

The calendar year averages are the averages of the Xactware, PPI and Time Element indices for the given year. These average indices measure the average cost level of each year relative to the base.

CURRENT COST
FACTORS

The current cost factors are the ratios of the indices for the latest period of cost information divided by the average indices for each calendar year. These factors measure the changes in cost levels which have occurred from the midpoint of the given year to the latest point of cost information. In this regard, they represent average factors which would result if each year's losses were distributed evenly throughout the year.

For buildings, the index for the latest point is based on the latest available Xactware point.

Since losses are trended on a record by record basis, these calendar year factors are not actually used in ISO's trend calculations. Instead, factors are calculated from the bi-monthly or quarterly indices and applied to the unit losses based on the date of occurrence.

TABLE 22

SUMMARY OF LOSS TREND ADJUSTMENTS (LTA'S)

<u>BUILDINGS</u>	<u>5 YEAR INCURRED LOSSES</u>	<u>LTA'S*</u>
BASIC GROUP I	3,397,603,765	-0.3
BASIC GROUP II	3,091,434,408	0.2
SPECIAL CAUSES OF LOSS	1,852,163,757	0.2
TOTAL	8,341,201,930	0.0
 <u>CONTENTS</u>		
BASIC GROUP I	964,588,247	0.7
BASIC GROUP II	283,850,498	0.6
SPECIAL CAUSES OF LOSS	724,827,074	0.0
TOTAL	1,973,265,819	0.4
 <u>TIME ELEMENT</u>		
BASIC GROUP I	397,520,411	2.8
BASIC GROUP II	75,461,620	2.6
SPECIAL CAUSES OF LOSS	138,773,134	2.8
TOTAL	611,755,165	2.8
GRAND TOTAL	10,926,222,913	0.2

* The LTA's are based on internal severity and frequency data. They apply to both the historical period and projection period.

EXPLANATORY NOTES TO TABLE 22

SUMMARY OF LOSS TREND ADJUSTMENTS (LTA'S)

COLUMN (1)

COVERAGE

The LTA's vary by coverage (buildings, contents, and time element) and line of business (BG I, BG II, and SCL).

COLUMN (2)

FIVE-YEAR INCURRED LOSSES

The five-year multistate incurred losses are used as weights to determine the annual LTA for all lines of business and coverages combined.

COLUMN (3)

ANNUAL LTA's

The LTA's are the factors which are applied to losses to supplement the external indices in order to correctly reflect cost level and claim frequency changes. These are shown here as annual factors. However, they are applied over the entire length of the trend period, i.e. from the date of loss occurrence to the anticipated average accident date under the revised loss costs. The severity portion of the LTA is applied on an individual record basis in the same manner as the CCF's and LPF's. The frequency portion of the LTA is applied to the aggregate losses.

OVERVIEW

DEVELOPMENT OF LOSS TREND ADJUSTMENTS

INTRODUCTION

In order to supplement the external indices reflected in CCF's and LPF's, loss trend adjustments (LTA's) have been developed based on internal loss data. This is necessary because the external indices alone have been insufficient in reflecting cost level and claim frequency changes in Commercial Property Insurance. The following tables show the calculations used to develop these LTA's. Please note the development of the LTA's for the 2019 COMFAL reviews is based on internal commercial property experience through 12/31/2017 and external cost indices through 12/31/2017. Therefore, the CCF's and LPF's shown on Table 23 will not necessarily match those shown on Table 21. ISO has determined that the selected LTAs are appropriate to be used with the latest external indices shown on Table 21.

TABLE 23
DEVELOPMENT OF LTA'S

I. EXTERNAL RATE OF CHANGE^a

Calendar Year	(1) Buildings Current Cost Factor	(2) Contents Current Cost Factor	(3) Time Element Cost Factor	(4) Basic Group I (BGI)& Special Causes of Loss (SCL) Weights	(5) Basic Group II (BGII) Weights
2008	1.247	1.240	1.062		0.10
2009	1.191	1.189	1.043		0.10
2010	1.155	1.171	1.052		0.10
2011	1.164	1.150	1.038		0.10
2012	1.155	1.113	1.004		0.10
2013	1.144	1.085	0.989	0.10	0.10
2014	1.125	1.067	0.986	0.15	0.10
2015	1.103	1.041	0.983	0.20	0.10
2016	1.058	1.029	1.002	0.25	0.10
2017	1.040	1.023	1.012	0.30	0.10

(6) AVERAGE CURRENT COST FACTORS

	Buildings	Contents	Time Element
Basic Group I and Special Causes of Loss (Weighted on Column (4))	1.080	1.041	0.998
Basic Group II (Weighted on Column (5))	1.138	1.111	1.017

(7) LOSS PROJECTION FACTORS

	Buildings	Contents	Time Element
Annual Rate of Change	0.024	0.011	-0.001
Loss Projection Factor: ^b $(1.0 + \text{Annual Rate of Change})^{(X/12)}$	1.063	1.029	0.998

(8) TOTAL TREND FACTOR (Average Current Cost Factor × Loss Projection Factor)

	Buildings	Contents	Time Element
Basic Group I and Special Causes of Loss	1.148	1.071	0.996
Basic Group II	1.210	1.143	1.015

(9) EXTERNAL ANNUAL RATE OF CHANGE^c

	Buildings	Contents	Time Element
Basic Group I and Special Causes of Loss: $(\text{Total Trend Factor})^{12/54}$	1.031	1.015	0.999
Basic Group II: $(\text{Total Trend Factor})^{12/90}$	1.026	1.018	1.002

- (a) The Current Cost Factors and Loss Projection Factors on this exhibit are based on external economic indices through December 31, 2017 for Buildings, Contents and Time Element.
- (b) Assuming a loss cost revision date of July 1, 2019, the time interval between the midpoint of the latest period of external trend information (November 15, 2018) and the prospective average date of loss (July 1, 2020) is 31.5 months for Buildings, Contents and Time Element.
- (c) The time interval from the weighted midpoint of the experience period to the prospective average date of loss (July 1, 2020) is 54 months for BG I and SCL, and 90 months for BG II. The weighted midpoint is January 1, 2016 for BG I and SCL, and January 1, 2013 for BG II.

TABLE 23
DEVELOPMENT OF LTA'S

II. INTERNAL ANNUAL RATES OF CHANGE:

(10) SELECTED COMFAL

	Buildings	Contents	Time Element
Basic Group I (BGI)	1.045	1.050	1.055
Basic Group II (BGII)	1.030	1.030	1.055
Special Causes of Loss	1.035	1.025	1.055

III. LTA CALCULATION:

CALCULATION OF LTAs - BUILDINGS

	(11) External Rate of Change ^d	(12) Internal Rate of Change	(13) Indicated Severity LTA [(12)/(11)-1.0]	(14) Formula Severity LTA ^e	(15) Frequency Effect	(16) Final LTA ^f
Basic Group I (BGI)	1.031	1.045	1.4	0.7	-1.0	-0.3
Basic Group II (BGII)	1.026	1.030	0.4	0.2	0.0	0.2
Special Causes of Loss	1.031	1.035	0.4	0.2	0.0	0.2

CALCULATION OF LTAs - CONTENTS

	(11) External Rate of Change ^d	(12) Internal Rate of Change	(13) Indicated Severity LTA [(12)/(11)-1.0]	(14) Formula Severity LTA ^e	(15) Frequency Effect	(16) Final LTA ^f
Basic Group I (BGI)	1.015	1.050	3.4	1.7	-1.0	0.7
Basic Group II (BGII)	1.018	1.030	1.2	0.6	0.0	0.6
Special Causes of Loss	1.015	1.025	1.0	0.5	-0.5	0.0

CALCULATION OF LTAs - TIME ELEMENT

	(11) External Rate of Change ^d	(12) Internal Rate of Change	(13) Indicated Severity LTA [(12)/(11)-1.0]	(14) Formula Severity LTA ^e	(15) Frequency Effect	(16) Final LTA ^f
Basic Group I (BGI)	0.999	1.055	5.6	2.8	0.0	2.8
Basic Group II (BGII)	1.002	1.055	5.3	2.6	0.0	2.6
Special Causes of Loss	0.999	1.055	5.6	2.8	0.0	2.8

(d) The external rates of change are based on external economic indices through December 31, 2017 for Buildings, Contents and Time Element.

(e) The formula severity LTA for Buildings, Contents and Time Element is calculated as one-half of the indicated severity LTA. This is equivalent to calculating the overall severity trend giving 50% weight to the external trend and 50% weight to the selected internal trend.

(f) The final LTA is calculated as the product (in factor form) of the formula severity LTA and frequency effect.

EXPLANATORY NOTES TO TABLE 23

DEVELOPMENT OF LOSS TREND ADJUSTMENTS (LTA'S)

I. EXTERNAL RATE OF CHANGE

COLUMN (1), (2)
AND (3)

CURRENT COST FACTORS

The CCF's underlying the LTA analysis are based on external cost indices through 12/31/2017 for buildings, contents and time element.

COLUMNS (4)
AND (5)

WEIGHTS

The standard review weights are shown for each line of business.

LINES (6)

AVERAGE CURRENT COST FACTORS

The average CCF's for the experience period are calculated based on the weights shown in columns (4) and (5).

LINE (7)

LOSS PROJECTION FACTORS

The LPF's underlying the LTA analysis are shown here.

LINE (8)

TOTAL TREND

The total trend is the product of the average CCF and the LPF.

LINE (9)

EXTERNAL ANNUAL RATE OF CHANGE

The total trend is converted to an annual basis by raising it to the reciprocal of the number of years between the weighted midpoint of the experience period and the anticipated average accident date. For BG I and SCL the weighted midpoint of the experience period is 1/1/2016, for BG II it is 1/1/2013. Accordingly, there are 54 and 90 months, respectively, to the anticipated average accident date of 7/1/2020.

II. INTERNAL ANNUAL RATES OF CHANGES

LINE (10)

SELECTED COMFAL

The displayed annual rates of change in the average claim costs for BG I, BG II, and SCL were selected based on several least squares exponential fits of the annual claim costs for each subline. This was done to the most recent ten years of Commercial Property data using all companies in the ratemaking data base.

EXPLANATORY NOTES TO TABLE 23 (cont'd)

III. LTA CALCULATION

COLUMN (11)

ANNUAL EXTERNAL

The annual external rates of change from column (9) are shown here.

COLUMN (12)

ANNUAL INTERNAL

The adjusted annual internal rates of change in average loss from line (10) are shown here.

COLUMN (13)

INDICATED SEVERITY LTA

The indicated severity LTA's are calculated by dividing the annual internal rates of change by the annual external rates of change.

COLUMN (14)

FORMULA SEVERITY LTA

The severity LTA's in column (13) are then selected to temper the full effect of internal trend data. Without such tempering, full weight would in effect be given to the internal data without any consideration of the external cost indices.

COLUMN (15)

FREQUENCY EFFECT

The displayed annual rates of change in claim frequency for BG I and SCL were selected based on several least squares exponential fits of the claim frequency by subline. No frequency trend was selected for BG II and SCL buildings due to the extremely volatile nature of the coverage.

COLUMN (16)

FINAL LTA

The final LTA is the combination of the severity and frequency trend adjustments, calculated as column (14) times column (15), in factor form.

TABLE 24A

EXPOSURE TREND
DEVELOPMENT OF CURRENT AND PROJECTED EARNED EXPOSURE FACTORS

<u>Year</u>	<u>Buildings</u>				<u>Contents</u>			
	<u>(1)^a</u> <u>Annual</u> <u>Written</u> <u>Increase</u>	<u>(2)^a</u> <u>07-01-2018</u> <u>Written</u> <u>Factors</u>	<u>(3)^b</u> <u>07-01-2020</u> <u>Projected</u> <u>Factors</u>	<u>(4)^c</u> <u>07-01-2020</u> <u>Earned</u> <u>Factors</u>	<u>(5)^a</u> <u>Annual</u> <u>Written</u> <u>Increase</u>	<u>(6)^a</u> <u>07-01-2018</u> <u>Written</u> <u>Factors</u>	<u>(7)^b</u> <u>07-01-2020</u> <u>Projected</u> <u>Factors</u>	<u>(8)^c</u> <u>07-01-2020</u> <u>Earned</u> <u>Factors</u>
2006	3.8%	1.380	1.453	1.507	2.1%	1.268	1.317	1.345
2007	3.9%	1.328	1.398	1.453	2.4%	1.238	1.285	1.317
2008	3.5%	1.283	1.351	1.399	2.4%	1.209	1.255	1.285
2009	3.3%	1.242	1.307	1.351	2.2%	1.183	1.228	1.255
2010	2.5%	1.212	1.276	1.309	1.7%	1.163	1.208	1.229
2011	2.5%	1.182	1.244	1.276	1.8%	1.142	1.186	1.208
2012	2.7%	1.151	1.212	1.244	1.8%	1.122	1.165	1.186
2013	2.6%	1.122	1.181	1.212	2.1%	1.099	1.141	1.165
2014	2.5%	1.095	1.153	1.181	2.1%	1.076	1.117	1.141
2015	2.3%	1.070	1.126	1.153	1.9%	1.056	1.097	1.118
2016	2.1%	1.048	1.103	1.127	1.8%	1.037	1.077	1.097
2017	2.1%	1.026	1.080	1.103	1.8%	1.019	1.058	1.077
2018	2.6%	1.000	1.053	1.080	1.9%	1.000	1.038	1.058

Notes

a The percentages in columns (1) and (5) represent the change in written exposures from 07/01/n-1 to 07/01/n. Columns (2) and (6) contain the cumulative changes in written exposures for each year relative to the latest year.

b The selected average annual changes in Amount of Insurance for projection purposes are 2.6% and 1.9% for Buildings and Contents, respectively. Consequently, the written factors at 07/01/2018 levels in column (2) and column (6) are brought to the level of the average date of writing in the effective period, 07/01/2020 (i.e., 6 months beyond an assumed revision date of 01/01/2020), by applying a factor of $(1.026)^{24/12}$ for Buildings and $(1.019)^{24/12}$ for Contents.

c Written factors are earned into each accident year ending 12/31 using the following factors which assume all one year policies:

<u>Year</u>	<u>Earning Factors</u>
	<u>All Years</u>
n-2	1/8
n-1	3/4
n	1/8

For example, the factors used to adjust earned exposures for the period from 01/01/2018 to 12/31/2018 to the projected level are 1.080 for Buildings and 1.058 for Contents.

TABLE 24A (cont'd)

EXPOSURE TREND
DEVELOPMENT OF CURRENT AND PROJECTED EARNED EXPOSURE FACTORS

	Time Element			
	(1) ^a Annual Written <u>Year</u> <u>Increase</u>	(2) ^a 07-01-2018 Written <u>Factors</u>	(3) ^b 07-01-2020 Projected <u>Factors</u>	(4) ^c 07-01-2020 Earned <u>Factors</u>
2006	1.4%	1.118	1.131	1.148
2007	1.3%	1.104	1.117	1.131
2008	1.3%	1.090	1.103	1.117
2009	0.8%	1.081	1.094	1.104
2010	0.7%	1.073	1.086	1.094
2011	0.8%	1.064	1.077	1.086
2012	0.8%	1.056	1.069	1.077
2013	0.9%	1.047	1.060	1.069
2014	1.0%	1.037	1.049	1.060
2015	1.1%	1.026	1.038	1.049
2016	1.1%	1.015	1.027	1.038
2017	0.9%	1.006	1.018	1.027
2018	0.6%	1.000	1.012	1.018

Notes

a The percentage in column (1) represents the change in written exposures from 07/01/n-1 to 07/01/n. Column (2) is the cumulative change in written exposures for each year relative to the latest year.

b The selected average annual change in Net Income (Time Element exposure) for projection purposes is 0.6%. Consequently, the written factors at 07/01/2018 levels in column (2) are brought to the level of the average date of writing in the effective period, 07/01/2020 (i.e., 6 months beyond an assumed revision date of 01/01/2020), by applying a factor of $(1.006)^{24/12}$ for Time Element.

c Written factors are earned into each accident year ending 12/31 using the following factors which assume all one year policies:

<u>Year</u>	<u>Earning Factors</u>
	<u>All Years</u>
n-2	1/8
n-1	3/4
n	1/8

For example, the factor used to adjust earned exposures for the period from 01/01/2018 to 12/31/2018 to the projected level is 1.018.

TABLE 24B

PREMIUM TREND - BASIC GROUP I
DEVELOPMENT OF CURRENT AND PROJECTED EARNED PREMIUM FACTORS

<u>Year</u>	<u>Buildings</u>				<u>Contents</u>			
	<u>(1)^a</u> <u>Annual</u> <u>Written</u> <u>Increase</u>	<u>(2)^a</u> <u>07-01-2018</u> <u>Written</u> <u>Factors</u>	<u>(3)^b</u> <u>07-01-2020</u> <u>Projected</u> <u>Factors</u>	<u>(4)^c</u> <u>07-01-2020</u> <u>Earned</u> <u>Factors</u>	<u>(5)^a</u> <u>Annual</u> <u>Written</u> <u>Increase</u>	<u>(6)^a</u> <u>07-01-2018</u> <u>Written</u> <u>Factors</u>	<u>(7)^b</u> <u>07-01-2020</u> <u>Projected</u> <u>Factors</u>	<u>(8)^c</u> <u>07-01-2020</u> <u>Earned</u> <u>Factors</u>
2006	3.1%	1.297	1.352	1.393	1.8%	1.219	1.258	1.281
2007	3.1%	1.258	1.311	1.352	2.0%	1.195	1.234	1.258
2008	2.8%	1.224	1.276	1.312	2.0%	1.172	1.210	1.234
2009	2.7%	1.192	1.243	1.276	1.8%	1.151	1.188	1.210
2010	2.0%	1.169	1.219	1.244	1.4%	1.135	1.172	1.189
2011	2.0%	1.146	1.195	1.219	1.5%	1.118	1.154	1.172
2012	2.2%	1.121	1.169	1.195	1.5%	1.101	1.137	1.154
2013	2.1%	1.098	1.145	1.169	1.8%	1.082	1.117	1.137
2014	2.0%	1.076	1.122	1.145	1.8%	1.063	1.097	1.117
2015	1.9%	1.056	1.101	1.122	1.6%	1.046	1.080	1.097
2016	1.7%	1.038	1.082	1.101	1.5%	1.031	1.064	1.080
2017	1.7%	1.021	1.064	1.082	1.5%	1.016	1.049	1.064
2018	2.1%	1.000	1.042	1.064	1.6%	1.000	1.032	1.049

Notes

a The percentages in columns (1) and (5) represent the change in written premium (reflecting the combined effect of change in exposures and limit of insurance factors) from 07/01/n-1 to 07/01/n. Columns (2) and (6) contain the cumulative changes in written premiums for each year relative to the latest year.

b The average annual changes in Premium for projection purposes are 2.1% and 1.6% for Buildings and Contents, respectively. Consequently, the written factors at 07/01/2018 levels in column (2) and column (6) are brought to the level of the average date of writing in the effective period, 07/01/2020 (i.e., 6 months beyond an assumed revision date of 01/01/2020), by applying a factor of $(1.021)^{24/12}$ for Buildings and $(1.016)^{24/12}$ for Contents.

c Written factors are earned into each accident year ending 12/31 using the following factors which assume all one year policies:

<u>Year</u>	<u>Earning Factors</u>
	<u>All Years</u>
n-2	1/8
n-1	3/4
n	1/8

For example, the factors used to adjust earned exposures for the period from 01/01/2018 to 12/31/2018 to the projected level are 1.064 for Buildings and 1.049 for Contents.

TABLE 24C

PREMIUM TREND - BASIC GROUP II - OTHER THAN SOUTHEAST
DEVELOPMENT OF CURRENT AND PROJECTED EARNED PREMIUM FACTORS

Year	Buildings				Contents			
	(1) ^a Annual Written Increase	(2) ^a 07-01-2018 Written Factors	(3) ^b 07-01-2020 Projected Factors	(4) ^c 07-01-2020 Earned Factors	(5) ^a Annual Written Increase	(6) ^a 07-01-2018 Written Factors	(7) ^b 07-01-2020 Projected Factors	(8) ^c 07-01-2020 Earned Factors
2006	2.8%	1.272	1.321	1.358	1.6%	1.197	1.231	1.250
2007	2.9%	1.236	1.283	1.321	1.8%	1.176	1.209	1.231
2008	2.6%	1.205	1.251	1.284	1.8%	1.155	1.188	1.209
2009	2.4%	1.177	1.222	1.251	1.7%	1.136	1.168	1.188
2010	1.9%	1.155	1.199	1.223	1.3%	1.121	1.153	1.169
2011	1.9%	1.133	1.176	1.199	1.4%	1.106	1.137	1.153
2012	2.0%	1.111	1.154	1.176	1.4%	1.091	1.122	1.137
2013	1.9%	1.090	1.132	1.154	1.6%	1.074	1.104	1.122
2014	1.9%	1.070	1.111	1.132	1.6%	1.057	1.087	1.104
2015	1.7%	1.052	1.092	1.111	1.4%	1.042	1.071	1.087
2016	1.6%	1.035	1.075	1.092	1.4%	1.028	1.057	1.071
2017	1.6%	1.019	1.058	1.075	1.4%	1.014	1.043	1.057
2018	1.9%	1.000	1.038	1.058	1.4%	1.000	1.028	1.043

Notes

a The percentages in columns (1) and (5) represent the change in written premium (reflecting the combined effect of change in exposures and limit of insurance factors) from 07/01/n-1 to 07/01/n. Columns (2) and (6) contain the cumulative changes in written premiums for each year relative to the latest year.

b The average annual changes in Premium for projection purposes are 1.9% and 1.4% for Buildings and Contents, respectively. Consequently, the written factors at 07/01/2018 levels in column (2) and column (6) are brought to the level of the average date of writing in the effective period, 07/01/2020 (i.e., 6 months beyond an assumed revision date of 01/01/2020), by applying a factor of $(1.019)^{24/12}$ for Buildings and $(1.014)^{24/12}$ for Contents.

c Written factors are earned into each accident year ending 12/31 using the following factors which assume all one year policies:

Year	Earning Factors
	All Years
n-2	1/8
n-1	3/4
n	1/8

For example, the factors used to adjust earned premium for the period from 01/01/2018 to 12/31/2018 to the projected level are 1.058 for Buildings and 1.043 for Contents.

TABLE 24D

**PREMIUM TREND - SPECIAL CAUSES OF LOSS
DEVELOPMENT OF CURRENT AND PROJECTED EARNED PREMIUM FACTORS**

Year	Buildings				Contents			
	(1) ^a Annual Written Increase	(2) ^a 07-01-2018 Written Factors	(3) ^b 07-01-2020 Projected Factors	(4) ^c 07-01-2020 Earned Factors	(5) ^a Annual Written Increase	(6) ^a 07-01-2018 Written Factors	(7) ^b 07-01-2020 Projected Factors	(8) ^c 07-01-2020 Earned Factors
2006	2.9%	1.281	1.333	1.371	1.4%	1.168	1.196	1.213
2007	3.0%	1.244	1.294	1.333	1.6%	1.150	1.178	1.196
2008	2.7%	1.211	1.260	1.295	1.6%	1.132	1.159	1.178
2009	2.5%	1.181	1.229	1.260	1.4%	1.116	1.143	1.159
2010	1.9%	1.159	1.206	1.230	1.1%	1.104	1.131	1.144
2011	1.9%	1.137	1.183	1.206	1.2%	1.091	1.117	1.131
2012	2.1%	1.114	1.159	1.183	1.2%	1.078	1.104	1.117
2013	2.0%	1.092	1.136	1.159	1.4%	1.063	1.089	1.104
2014	1.9%	1.072	1.115	1.136	1.4%	1.048	1.073	1.089
2015	1.8%	1.053	1.096	1.115	1.2%	1.036	1.061	1.074
2016	1.6%	1.036	1.078	1.096	1.2%	1.024	1.049	1.061
2017	1.6%	1.020	1.061	1.078	1.2%	1.012	1.036	1.049
2018	2.0%	1.000	1.040	1.061	1.2%	1.000	1.024	1.036

Notes

a The percentages in columns (1) and (5) represent the change in written premium (reflecting the combined effect of change in exposures and limit of insurance factors) from 07/01/n-1 to 07/01/n. Columns (2) and (6) contain the cumulative changes in written premiums for each year relative to the latest year.

b The average annual changes in Premium for projection purposes are 2.0% and 1.2% for Buildings and Contents, respectively. Consequently, the written factors at 07/01/2018 levels in column (2) and column (6) are brought to the level of the average date of writing in the effective period, 07/01/2020 (i.e., 6 months beyond an assumed revision date of 01/01/2020), by applying a factor of $(1.020)^{24/12}$ for Buildings and $(1.012)^{24/12}$ for Contents.

c Written factors are earned into each accident year ending 12/31 using the following factors which assume all one year policies:

Year	Earning Factors
	All Years
n-2	1/8
n-1	3/4
n	1/8

For example, the factors used to adjust earned premium for the period from 01/01/2018 to 12/31/2018 to the projected level are 1.061 for Buildings and 1.036 for Contents.

EXPLANATORY NOTES TO TABLES 24A - 24D
EXPOSURE AND PREMIUM TREND FACTORS

Table 24A contains Exposure trend factors.

Tables 24B, 24C and 24D contain Premium trend factors for Basic Group I, Basic Group II and Special Causes of Loss respectively, building and contents. As annual written exposures increase (decrease), the resulting limit of insurance factors used for rating decrease (increase) and the combined effect should be reflected when trending premiums to future level. There are separate premium trend factor tables for Basic Group I, Basic Group II and Special Causes of Loss since there are separate limit of insurance curves for BG I, BG II and SCL.

For Time Element, exposure trend factors are also used to trend premiums, i.e., there are not separate Time Element premium trend factors because Time Element does not use limit of insurance factors for rating.

COLUMNS (1)
AND (5)

ANNUAL WRITTEN INCREASE

The annual written increases for buildings, contents, and time element are calculated from the actual changes in amount of insurance from one year to the next for a sample of renewal policies (based on BG I experience). The change in amount of insurance for each policy in the sample was weighted with its prior year's premiums to obtain a weighted average change for each year. The Annual Written Increase in Premiums (Tables 24B, 24C and 24D) are calculated as the Annual Written Increase in Exposure tempered by the change in Limit of Insurance factor.

COLUMNS (2)
AND (6)

07-01-2018 WRITTEN FACTORS

The written factors for a given year are the product of the written annual changes for all years subsequent to that year. Although the 2018 written changes are based on two quarters of data, the consistency of this experience allows for the assumption that written changes for the first half of 2018 are applicable for the entire year.

COLUMNS (3)
AND (7)

07-01-2020 PROJECTED FACTORS

The 07-01-2020 factors are calculated by applying a factor to adjust the 07-01-2018 written factors to the amount of insurance level at the average date of writing, 07-01-2020. This is done using the selected annual changes in exposure or premium.

COLUMNS (4)
AND (8)

07-01-2020 EARNED EXPOSURES/PREMIUM FACTORS

The projected earned factors at the 07-01-2020 level (where 07-01-2020 is the average date of writing in the effective period) are calculated by earning the written factors assuming all one-year policies. The earning factors are shown in footnote (c).

KENTUCKY
TABLE 25

BASIC GROUP I

ADDITIONAL INFORMATION ON TREND ADJUSTMENTS

YEAR	(1)	(2)	(3)	(4)		TIME ELEMENT
	UNADJUSTED INCURRED LOSSES	TRENDED INCURRED LOSSES	AVERAGE TOTAL LOSS TREND FACTOR (2) / (1)	SPLIT %		
				BUILDINGS	CONTENTS	
2014	13,874,442	17,885,226	1.289	73.9%	23.9%	2.2%
2015	13,617,475	16,764,005	1.231	74.5%	20.5%	5.0%
2016	23,403,220	27,853,408	1.190	73.8%	11.2%	15.0%
2017	25,244,736	29,297,647	1.161	69.6%	26.5%	3.9%
2018	15,724,278	17,576,730	1.118	76.9%	20.0%	3.1%

KENTUCKY
TABLE 26

BASIC GROUP II

ADDITIONAL INFORMATION ON TREND ADJUSTMENTS

YEAR	(1)	(2)	(3)	(4)		TIME ELEMENT
	UNADJUSTED INCURRED LOSSES	TRENDED INCURRED LOSSES	AVERAGE TOTAL LOSS TREND FACTOR (2) / (1)	SPLIT %		
				BUILDINGS	CONTENTS	
2009	43,909,720	58,078,633	1.323	88.2%	8.5%	3.3%
2010	5,866,626	7,715,696	1.315	71.6%	27.7%	0.7%
2011	16,399,394	20,769,221	1.266	91.5%	6.0%	2.5%
2012	66,057,313	83,787,099	1.268	96.7%	2.6%	0.7%
2013	8,051,306	10,165,249	1.263	89.2%	10.5%	0.3%
2014	7,017,966	8,714,233	1.242	91.2%	7.3%	1.5%
2015	10,902,130	12,988,651	1.191	98.2%	1.8%	0.0%
2016	13,094,048	15,191,345	1.160	96.7%	3.1%	0.2%
2017	21,721,179	24,498,859	1.128	90.4%	9.0%	0.6%
2018	5,613,787	6,180,218	1.101	86.4%	11.2%	2.4%

KENTUCKY
TABLE 27

SPECIAL CAUSES OF LOSS

ADDITIONAL INFORMATION ON TREND ADJUSTMENTS

YEAR	(1)	(2)	(3)	(4)		TIME ELEMENT
	UNADJUSTED INCURRED LOSSES	TRENDED INCURRED LOSSES	AVERAGE TOTAL LOSS TREND FACTOR (2) / (1)	SPLIT %		
				BUILDINGS	CONTENTS	
2014	13,832,984	17,185,151	1.242	87.5%	11.7%	0.8%
2015	32,106,557	37,799,749	1.177	89.6%	8.4%	2.0%
2016	5,897,118	6,813,484	1.155	79.9%	19.8%	0.3%
2017	6,426,751	7,288,321	1.134	65.1%	34.0%	0.9%
2018	8,583,665	9,435,709	1.099	74.2%	25.0%	0.8%

EXPLANATORY NOTES TO TABLES 25, 26 AND 27

BG I, BG II, AND SCL ADDITIONAL INFORMATION ON TREND ADJUSTMENTS

COLUMN (1) UNADJUSTED INCURRED LOSSES

The unadjusted incurred losses are the reported losses prior to any adjustment.

COLUMN (2) TRENDED INCURRED LOSSES

The trended incurred losses are the aggregate of the individual losses trended on a unit record basis.

COLUMN (3) AVERAGE TREND FACTOR

The average trend factors are the trended incurred losses in column (2) divided by the unadjusted incurred losses in column (1). Although average factors could be calculated from the information contained in Tables 21 through 23, they would differ from the factors shown in this table for the following reasons:

- (1) In calculating such averages, the usual assumption is that the losses are spread evenly throughout the year, yielding the midpoint of each year as the average date of loss. A predominance of losses at a certain time of the year could shift the average accident date away from the midpoint.
- (2) The average trend factors will be slightly higher due to the impact of trend on the deductible.

COLUMN (4) PERCENTAGE SPLIT BETWEEN BUILDINGS, CONTENTS, AND TIME ELEMENT

The current cost factors and loss projection factors are different for buildings, contents, and time element. Therefore, in addition to the reasons cited above, the average trend factors will differ from state to state depending on the buildings/contents/time element split. Companies with splits substantially different from the industrywide averages shown here may find it appropriate to develop trend factors which reflect their own coverage mix.

LOSS DEVELOPMENT

INTRODUCTION

For Commercial Property, losses are evaluated as of September 30, 2018, three months after the end of the latest experience year used in the review. In order to account for development of losses beyond fifteen months and to reflect overall loss development patterns, loss development was incorporated into the adjustment process of incurred losses to their ultimate settlement value.

LOSS DEVELOPMENT PROCEDURES

The application of loss development factors recognizes the fact that not all of the Commercial Property losses for a particular accident year have been finally determined at the time the experience is compiled.

The incurred losses underlying the statewide loss cost level indications were evaluated as of September 30, 2018.

Accident year ended June 30, 2018 includes all losses paid on accidents from July 1, 2017 to June 30, 2018 and all losses outstanding on those accidents as of September 30, 2018, fifteen months after the inception of the accident year. Similarly, accident years ended June 30, 2017, 2016, 2015 and 2014 include all losses paid and outstanding as of 27, 39, 51 and 63 months, respectively, after the inception of the accident year.

Thus, the immature experience reported as of 15, 27, 39 or 51 months must be adjusted to an ultimate settlement basis. This adjustment is accomplished through the use of loss development factors based on the historic multistate Basic Group I, Basic Group II, and Special Causes of Loss incurred losses as shown in Table 28.

TABLE 28
 BASIC GROUP I
 INCURRED LOSSES
 LOSS YEARS 2009-2018
 EVALUATED AS OF 9/2018

LOSSES AS OF					
YEAR ENDING	15 MONTHS	27 MONTHS	39 MONTHS	51 MONTHS	63 MONTHS
6/30/2009	1,050,426,515	1,029,260,907	1,023,569,754	1,032,254,019	1,028,148,127
6/30/2010	957,072,639	952,264,273	938,683,274	930,751,058	926,094,798
6/30/2011	989,660,178	975,973,425	960,866,659	947,897,904	947,075,793
6/30/2012	908,659,121	883,403,689	864,089,877	861,024,004	855,343,194
6/30/2013	936,101,117	901,278,654	887,829,991	876,766,139	862,345,384
6/30/2014	945,799,039	945,335,699	933,368,118	921,144,552	916,203,205
6/30/2015	849,619,662	837,702,539	818,591,368	815,735,642	
6/30/2016	848,223,504	835,485,521	824,397,387		
6/30/2017	893,872,673	861,483,439			
6/30/2018	1,142,176,213				

RATIOS				
YEAR ENDING	27:15 MONTHS	39:27 MONTHS	51:39 MONTHS	63:51 MONTHS
6/30/2009	0.980	0.994	1.008	0.996
6/30/2010	0.995	0.986	0.992	0.995
6/30/2011	0.986	0.985	0.987	0.999
6/30/2012	0.972	0.978	0.996	0.993
6/30/2013	0.963	0.985	0.988	0.984
6/30/2014	1.000	0.987	0.987	0.995
6/30/2015	0.986	0.977	0.997	
6/30/2016	0.985	0.987		
6/30/2017	0.964			
5 POINT AVERAGE	0.980	0.983	0.991	0.993

DEVELOPMENT FACTORS TO ULTIMATE

15 MONTHS TO ULTIMATE = 0.980 X 0.983 X 0.991 X 0.993 = 0.948

27 MONTHS TO ULTIMATE = 0.983 X 0.991 X 0.993 = 0.967

39 MONTHS TO ULTIMATE = 0.991 X 0.993 = 0.984

51 MONTHS TO ULTIMATE = 0.993 = 0.993

TABLE 28
 BASIC GROUP II
 INCURRED LOSSES
 LOSS YEARS 2009-2018
 EVALUATED AS OF 9/2018

LOSSES AS OF					
YEAR ENDING	15 MONTHS	27 MONTHS	39 MONTHS	51 MONTHS	63 MONTHS
6/30/2009	579,314,989	627,438,229	632,493,486	633,319,508	635,016,618
6/30/2010	593,473,536	613,709,201	616,811,155	618,534,968	620,010,002
6/30/2011	1,194,512,759	1,300,964,928	1,312,448,690	1,322,755,319	1,336,992,084
6/30/2012	870,336,643	924,388,549	936,632,146	949,177,607	952,945,803
6/30/2013	748,910,135	792,509,415	805,350,297	818,039,505	825,996,247
6/30/2014	637,750,446	669,816,137	677,712,346	685,417,259	689,783,316
6/30/2015	435,688,364	467,509,244	474,346,909	480,871,412	
6/30/2016	630,699,956	675,870,627	695,978,304		
6/30/2017	788,050,528	869,693,520			
6/30/2018	539,134,252				

RATIOS				
YEAR ENDING	27:15 MONTHS	39:27 MONTHS	51:39 MONTHS	63:51 MONTHS
6/30/2009	1.083	1.008	1.001	1.003
6/30/2010	1.034	1.005	1.003	1.002
6/30/2011	1.090	1.009	1.008	1.011
6/30/2012	1.062	1.013	1.013	1.004
6/30/2013	1.058	1.016	1.016	1.010
6/30/2014	1.050	1.012	1.011	1.006
6/30/2015	1.073	1.015	1.014	
6/30/2016	1.072	1.030		
6/30/2017	1.104			
5 POINT AVERAGE	1.071	1.017	1.012	1.007

DEVELOPMENT FACTORS TO ULTIMATE

15 MONTHS TO ULTIMATE = 1.071 X 1.017 X 1.012 X 1.007 = 1.110
 27 MONTHS TO ULTIMATE = 1.017 X 1.012 X 1.007 = 1.036
 39 MONTHS TO ULTIMATE = 1.012 X 1.007 = 1.019
 51 MONTHS TO ULTIMATE = 1.007 = 1.007

TABLE 28
SPECIAL CAUSES OF LOSS
INCURRED LOSSES
LOSS YEARS 2009-2018
EVALUATED AS OF 9/2018

LOSSES AS OF					
YEAR ENDING	15 MONTHS	27 MONTHS	39 MONTHS	51 MONTHS	63 MONTHS
6/30/2009	637,118,000	629,872,649	633,789,200	627,566,991	627,084,722
6/30/2010	691,476,434	678,758,185	676,942,016	674,742,971	674,958,734
6/30/2011	745,957,244	730,915,165	722,472,296	721,768,992	720,008,114
6/30/2012	455,332,279	443,766,392	439,670,150	440,561,037	437,724,920
6/30/2013	428,040,480	430,727,560	421,200,231	423,042,249	424,352,905
6/30/2014	666,406,888	662,491,780	658,064,917	658,931,592	655,772,070
6/30/2015	611,845,522	615,095,309	612,242,351	611,147,871	
6/30/2016	371,521,520	381,417,818	378,954,250		
6/30/2017	417,171,371	430,086,614			
6/30/2018	554,002,545				

RATIOS					
YEAR ENDING	27:15 MONTHS	39:27 MONTHS	51:39 MONTHS	63:51 MONTHS	
6/30/2009	0.989	1.006	0.990	0.999	
6/30/2010	0.982	0.997	0.997	1.000	
6/30/2011	0.980	0.988	0.999	0.998	
6/30/2012	0.975	0.991	1.002	0.994	
6/30/2013	1.006	0.978	1.004	1.003	
6/30/2014	0.994	0.993	1.001	0.995	
6/30/2015	1.005	0.995	0.998		
6/30/2016	1.027	0.994			
6/30/2017	1.031				
5 POINT AVERAGE	1.013	0.990	1.001	0.998	

DEVELOPMENT FACTORS TO ULTIMATE

15 MONTHS TO ULTIMATE = $1.013 \times 0.990 \times 1.001 \times 0.998 = 1.002$

27 MONTHS TO ULTIMATE = $0.990 \times 1.001 \times 0.998 = 0.989$

39 MONTHS TO ULTIMATE = $1.001 \times 0.998 = 0.999$

51 MONTHS TO ULTIMATE = $0.998 = 0.998$

EXPLANATORY NOTES TO TABLE 28

LOSS DEVELOPMENT

INTRODUCTION

Table 28 shows multistate incurred loss development exhibits for Basic Group I, Basic Group II and Special Causes of Loss. The exhibits on Table 28 are arranged identically for each subline and can be summarized as listing the following information: incurred losses by accident year and age, age-to-age factors by accident year, and age-to-ultimate factors.

INCURRED LOSSES

The multistate incurred losses are shown by accident year and age at the top of Table 28. The multistate incurred losses are evaluated as of 15, 27, 39, 51 and 63 months. For Basic Group II, losses due to hurricanes reflected in the modeled hurricane loss costs have been removed from the experience for each rating territory and loss month.

AGE-TO-AGE DEVELOPMENT FACTORS

Age-to-age development factors or link ratios are calculated for each accident year. These age-to-age factors are calculated by dividing the incurred losses evaluated at each age by the incurred losses evaluated at the immediately preceding age. For example, 27:15 month age-to-age factors are calculated by taking the losses evaluated as of 27 months and dividing them by the losses evaluated as of 15 months, for each accident year. Age-to-age development factors are also calculated for 39:27 months, 51:39 months and 63:51 months. Latest five-year averages are then determined for each age-to-age interval.

AGE-TO-ULTIMATE DEVELOPMENT FACTORS

Age-to-ultimate factors are then calculated for the latest four years by multiplying the five-year average age-to-age development factors. These age-to-ultimate factors are then used in the adjustment of incurred losses to develop losses to their ultimate settlement value.

EXCESS LOSS PROCEDURES

INTRODUCTION

If not addressed, the presence or absence of large losses during the review period can produce significant fluctuations in loss cost levels. In order to develop a more stable body of experience, large losses have been smoothed. This procedure removes any excess losses from the experience and applies excess loss factors to the resultant state normal losses to generate the adjusted incurred losses. The adjusted losses developed in this manner replace the incurred losses in the loss cost level evaluation.

BASIC GROUP I

First, the excess portion of each large loss is removed from the trended loss experience.

Individual claim amounts that result from the same occurrence are grouped together, and if the total loss for one occurrence exceeds the normal loss cutoff (at 2005 cost levels), the total loss is identified as a large loss. Each large loss is then split into its normal and excess portions based on the normal loss cutoff.

The Basic Group I normal loss cutoff begins at \$250,000 and varies with the size of loss up to a maximum normal amount (approached asymptotically) of \$1,250,000. (The formula and a graph are shown on Table 29.) The portion of each large loss exceeding the cutoff is considered excess and the portion of any loss up to the cutoff is considered normal.

As noted above, the excess loss procedure is performed on trended loss experience (i.e. loss experience adjusted to prospective cost levels by the current cost factors, loss projection factors, and loss trend adjustment factors (for claim cost only) shown in Tables 21 through 22). The loss trend adjustment for frequency trend is not reflected at this step in the process. The normal breakpoint of \$250,000 for BGI and the parameters in the normal loss formula are at 2005 cost levels and therefore have been similarly adjusted to prospective cost levels.

Both the normal and total incurred losses are aggregated over all states by construction, protection, and amount of insurance intervals. The most recent ten years of experience are used in this analysis. Excess loss factors by construction, protection and amount of insurance are then calculated as the ratios of the ten year multistate incurred losses to the ten-year multistate normal losses.

These factors are then smoothed by fitting curves (by amount of insurance intervals) to the indicated factors. The resulting factors are then balanced so the original ten-year multistate incurred loss level is maintained.

EXCESS LOSS PROCEDURES (cont'd)

BASIC GROUP I (cont'd)

The excess factors are then applied to the state normal losses, which are maintained in the same detail (construction, protection and amount of insurance) as well as by year, territory, rating group and TOP. The state normal losses used in this calculation have also been trended for frequency.

The excess loss factors vary by construction, protection and the amount of insurance because these are the most significant severity-related rating variables.

BASIC GROUP II

Since catastrophic wind losses affect both the frequency and severity of loss, the Basic Group II excess procedure identifies periods of overall adverse experience, rather than individual large losses. Also, due to the extreme volatility of windstorm losses, a long-term review period (1950 - present) is used to estimate the expected excess losses.

Loss ratio cutoffs are used to determine normal losses, state excess losses, and regional excess losses for each year in the long-term review period. The application of these cutoffs is detailed in the explanatory notes to Table 31A. The state excess losses are used to determine the state excess component of the state excess multiplier, and the regional excess losses are used to determine the regional excess component. (Table 31B is a list of states by region.) The state excess multiplier is derived in such a manner as to provide an estimate of the expected excess loss dollars per normal loss dollar.

The state excess multiplier is applied to each accident year in the ten-year experience period used in the review. In this way, a review database is created reflecting both the current normal loss experience and the average excess loss experience based on the long-term review. This allows a concurrent evaluation of both the normal and the excess components of the BG II loss cost level.

SPECIAL CAUSES OF LOSS

Similar to Basic Group II, the Special Causes of Loss (SCL) smoothing procedure uses a loss ratio approach to reflect both the frequency and severity of unusual loss events which may produce significant fluctuations in loss cost levels. The excess procedure uses longer term statewide SCL experience (1985 - present) to account for the volatile nature of weather related losses (water damage from bursting pipes, or the weight of ice, sleet, or snow) which are the predominant cause of large SCL losses in a given experience period. A monthly normal loss ratio cutoff of 2.0 is used to define normal and excess losses. The resulting ratio of excess to normal losses over the long-term experience period is then applied to the normal losses used in the loss cost level review. SCL has a lower loss ratio cutoff than that used in Basic Group II in order to reflect the less catastrophic nature of unusual SCL loss events. The calculations underlying the smoothing procedure are described in the Explanatory Notes to Table 32.

**TABLE 29 - COUNTRYWIDE BASIC GROUP I EXCESS LOSS FACTORS
BY CONSTRUCTION, PROTECTION AND EXPOSURE**

		Amount of Insurance *										
		1	2	3	4	5	6	7	8	9	10	11
Const. 1-3	Prot. 1-4	1.000	1.043	1.089	1.136	1.186	1.237	1.291	1.347	1.405	1.467	2.048
	Prot. 5-7	1.000	1.054	1.112	1.172	1.235	1.302	1.373	1.448	1.526	1.609	2.436
	Prot. 8-10	1.000	1.062	1.129	1.199	1.274	1.353	1.437	1.527	1.622	1.723	2.770

		Amount of Insurance *										
		1	2	3	4	5	6	7	8	9	10	11
Const. 4-6	Prot. 1-4	1.000	1.042	1.086	1.132	1.180	1.229	1.281	1.335	1.392	1.450	2.005
	Prot. 5-7	1.000	1.053	1.109	1.167	1.229	1.294	1.363	1.435	1.511	1.591	2.386
	Prot. 8-10	1.000	1.061	1.126	1.195	1.267	1.345	1.427	1.514	1.606	1.704	2.712

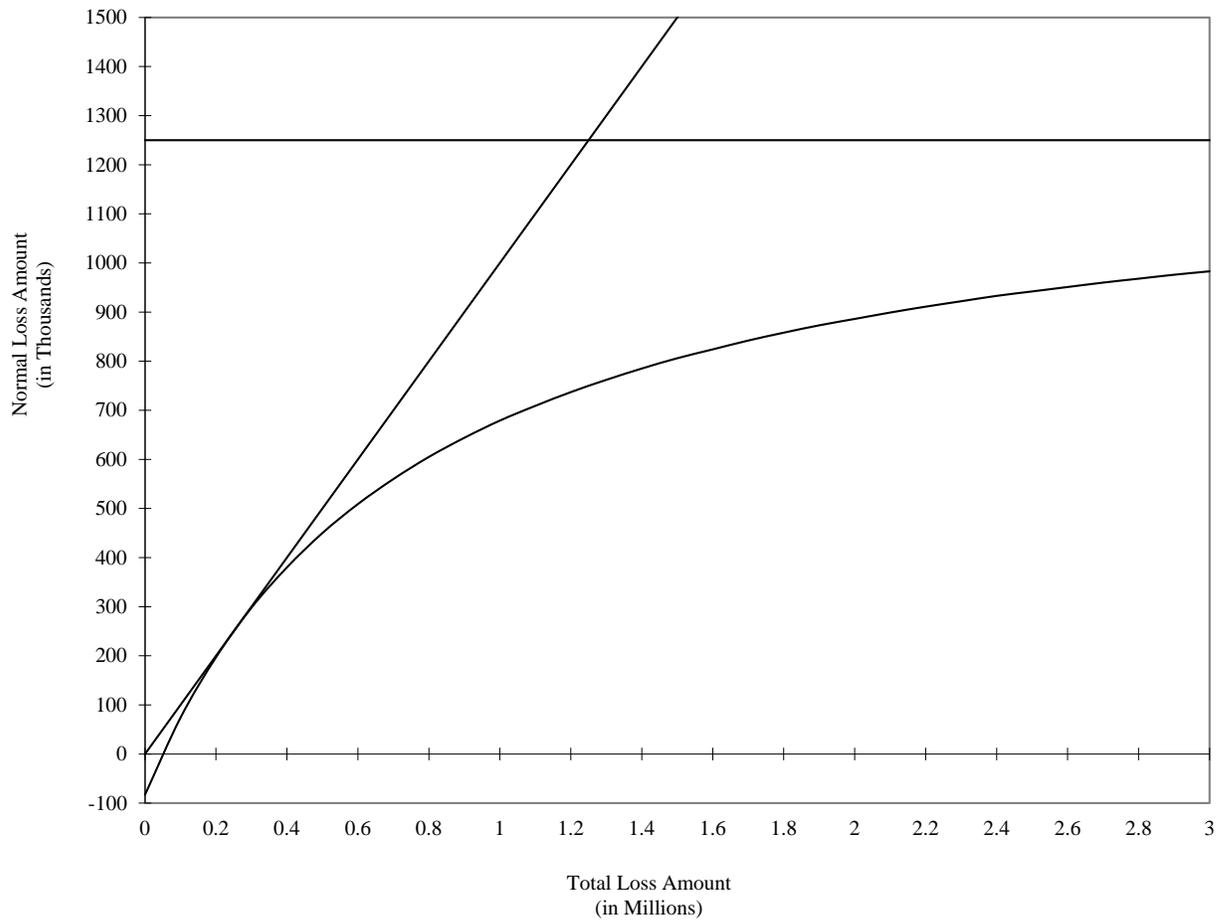
* Amount of Insurance Intervals

1	0-421,000
2	421,001-500,000
3	500,001-700,000
4	700,001-1,000,000
5	1,000,001-1,500,000
6	1,500,001-2,500,000
7	2,500,001-3,500,000
8	3,500,001-5,500,000
9	5,500,001-7,500,000
10	7,500,001-10,000,000
11	10,000,001 and over

Table 29 (cont'd)

Countrywide Basic Group I
Normal vs. Total Loss Amount

$$\text{Normal Loss} = \$1,250,000 \times (1 - (\$800,000 \div (\text{Total Loss} + \$750,000)))$$



EXPLANATORY NOTES TO TABLES 29

COUNTRYWIDE BASIC GROUP I EXCESS LOSS FACTORS

EXCESS LOSS
FACTORS

The multistate excess loss factors are the ratios of the ten-year multistate adjusted incurred losses to the ten-year multistate adjusted normal losses (both adjusted for severity trend). They are determined separately by construction, protection and amount of insurance range. Due to credibility considerations, both constructions and protections have been consolidated as shown. The amount of insurance ranges are also shown.

KENTUCKY
TABLE 30

BASIC GROUP I
ADDITIONAL EXCESS LOSS INFORMATION

YEAR	(1) TRENDED INCURRED LOSSES	(2) TRENDED NORMAL LOSSES	(3) STATE NORMAL % (2) / (1)	(4) MULTI- STATE NORMAL %	(5) ADJUSTED INCURRED LOSSES	(6) STATE AVERAGE EXCESS FACTOR (5) / (2)
2014	17,885,226	15,985,388	89.4%	72.1%	19,893,809	1.244
2015	16,764,005	14,576,573	87.0%	74.8%	20,733,928	1.422
2016	27,853,408	12,046,364	43.2%	70.4%	16,314,749	1.354
2017	29,297,647	17,638,910	60.2%	73.5%	25,391,654	1.440
2018	17,576,730	15,479,723	88.1%	67.3%	21,304,163	1.376

EXPLANATORY NOTES TO TABLE 30

BASIC GROUP I ADDITIONAL EXCESS LOSS INFORMATION

COLUMN (1) TRENDED INCURRED LOSSES

The trended incurred losses are the aggregate of all individually-trended loss records prior to any adjustment for large losses. They are shown here fully trended for severity.

COLUMN (2) TRENDED NORMAL LOSSES

The normal losses are the aggregate of the normal portions of each loss occurrence. These are also fully trended.

COLUMN (3) STATE NORMAL PERCENTAGE

The state normal percentages are the statewide normal losses divided by the statewide trended incurred losses. These percentages can be used in conjunction with the multistate percentages and actual dollar amounts of normal losses to assess the state loss experience. For example, consistently lower state normal percentages relative to multistate normal percentages could indicate that the state has a greater propensity for large losses.

COLUMN (4) MULTISTATE NORMAL PERCENTAGES

The multistate normal percentages are the multistate normal losses divided by the multistate trended incurred losses. As noted above these can be used as a yardstick against which the statewide experience can be measured.

COLUMN (5) ADJUSTED INCURRED LOSSES

The adjusted incurred losses are the totals across all constructions, protections and exposures of the fully trended normal losses multiplied by the excess loss factors.

COLUMN (6) STATE AVERAGE EXCESS FACTOR

The state average excess factors are the adjusted incurred losses in column (5) divided by the normal losses in column (2). These factors represent the annual averages of the factors calculated separately by construction, protection and amount of insurance. The average excess factor reflects the normal loss mix by construction, protection and exposure. Heavy concentration in those subsets of the data with high excess factors will result in large average factors.

KENTUCKY
TABLE 31A

DEVELOPMENT OF BASIC GROUP II EXCESS MULTIPLIER

YEAR	(1)	(2)	(3)	(4)	(5)	(6)
	EARNED PREMIUMS	INCURRED LOSSES	NORMAL INCURRED LOSSES	NORMAL LOSS RATIO	STATE EXCESS LOSS RATIO	REGIONAL EXCESS LOSS RATIO
1950	1,442,336	209,488	209,488	0.145		
1951	1,710,845	413,322	413,322	0.242		
1952	1,875,314	383,411	383,411	0.204		
1953	1,791,325	445,966	445,966	0.249		
1954	1,761,197	597,081	597,081	0.339		
1955	1,804,430	779,561	779,561	0.432		
1956	1,906,160	1,016,118	1,016,118	0.533		
1957	2,109,303	849,634	849,634	0.403		
1958	2,113,988	400,636	400,636	0.190		
1959	2,146,915	1,243,243	1,243,243	0.579		
1960	2,312,892	903,397	903,397	0.391		
1961	2,357,648	1,097,027	1,097,027	0.465		
1962	2,409,666	863,148	863,148	0.358		
1963	2,324,693	914,766	914,766	0.393		
1964	2,174,456	1,180,233	1,180,233	0.543		
1965	2,097,074	778,303	778,303	0.371		
1966	2,015,930	1,114,862	1,114,862	0.553		
1967	1,986,325	1,220,619	1,220,619	0.615		
1968	1,899,030	925,296	925,296	0.487		
1969	1,943,175	1,119,463	1,119,463	0.576		
1970	2,575,096	1,451,940	1,451,940	0.564		
1971	2,570,703	1,654,227	1,654,227	0.643		
1972	2,985,557	2,133,556	2,133,556	0.715		
1973	3,093,441	1,621,558	1,621,558	0.524		
1974	3,560,212	13,967,044	2,609,635	0.733	1.302	1.888
1975	4,462,184	1,769,038	1,769,038	0.396		
1976	5,603,638	3,262,514	3,262,514	0.582		
1977	7,024,353	2,502,338	2,502,338	0.356		
1978	8,050,333	3,943,688	3,943,688	0.490		
1979	8,414,223	2,746,069	2,746,069	0.326		
1980	7,947,953	3,986,166	3,765,794	0.474	0.027	0.001
1981	7,235,494	3,433,007	3,433,007	0.474		
1982	7,542,960	7,621,017	6,986,692	0.926	0.080	0.004
1983	6,705,084	3,102,370	3,102,370	0.463		
1984	6,386,388	4,689,113	4,689,113	0.734		
1985	7,953,384	3,163,912	3,163,912	0.398		
1986	9,931,452	13,042,974	3,866,317	0.389	0.594	0.330
1987	9,701,883	3,007,823	3,007,823	0.310		
1988	9,226,980	4,568,349	3,931,510	0.426	0.066	0.003
1989	7,976,946	2,412,896	2,412,896	0.302		

KENTUCKY
TABLE 31A

DEVELOPMENT OF BASIC GROUP II EXCESS MULTIPLIER

YEAR	(1) EARNED PREMIUMS	(2) INCURRED LOSSES	(3) NORMAL INCURRED LOSSES	(4) NORMAL LOSS RATIO	(5) STATE EXCESS LOSS RATIO	(6) REGIONAL EXCESS LOSS RATIO
1990	7,857,336	2,822,592	2,822,592	0.359		
1991	7,817,895	4,303,142	2,988,706	0.382	0.151	0.017
1992	7,449,027	1,415,272	1,415,272	0.190		
1993	6,684,933	6,440,078	3,339,548	0.500	0.370	0.093
1994	6,656,928	2,359,935	2,359,935	0.355		
1995	7,232,154	5,109,045	3,071,787	0.425	0.241	0.040
1996	6,755,949	11,763,343	5,109,194	0.756	0.619	0.366
1997	6,245,298	2,757,217	2,757,217	0.441		
1998	5,832,945	30,675,204	4,599,758	0.789	1.552	2.918
1999	6,519,723	4,024,396	3,863,647	0.593	0.024	
2000	7,135,275	17,379,299	4,077,147	0.571	0.869	0.996
2001	7,616,451	5,214,212	3,845,778	0.505	0.162	0.018
2002	9,646,698	14,403,443	6,936,971	0.719	0.523	0.251
2003	9,735,606	4,465,913	3,645,364	0.374	0.080	0.005
2004	12,041,721	5,252,857	5,252,857	0.436		
2005	12,909,531	5,692,847	4,624,117	0.358	0.079	0.004
2006	13,845,498	11,210,419	7,871,504	0.569	0.210	0.031
2008	22,735,680	27,531,767	21,864,613	0.962	0.230	0.019
2009	15,752,513	43,909,720	14,243,914	0.904	1.078	0.805
2010	15,912,832	5,866,626	5,866,626	0.369		
2011	15,522,767	16,399,321	12,222,953	0.787	0.245	0.024
2012	16,500,503	66,057,313	12,183,336	0.738	1.670	1.595
2013	18,154,470	8,051,306	8,051,306	0.443		
2014	19,989,378	7,017,966	7,017,966	0.351		
2015	21,431,231	10,902,130	10,902,130	0.509		
2016	21,947,147	13,094,048	9,529,063	0.434	0.148	0.015
2017	23,765,236	21,721,179	15,390,979	0.648	0.244	0.022
2018	25,654,230	5,611,212	5,611,212	0.219		
TOTALS				32.979	10.564	9.445

(7) STATE EXCESS COMPONENT = (SELR / NLR) = 0.320

(8) REGIONAL EXCESS COMPONENT = 0.080

(9) STATE EXCESS MULTIPLIER = (1 + SEC) * (1 + REC) = 1.426

NOTE: FOR YEARS PRIOR TO 2007, THE DISPLAYED YEAR INCLUDES DATA FOR ACCIDENT YEAR ENDING 12/31. FOR YEARS 2009 TO 2018, THE DISPLAYED YEAR INCLUDES DATA FOR ACCIDENT YEAR ENDING 06/30. THE DISPLAYED YEAR 2008 INCLUDES DATA FOR FIRST QUARTER 2007 THROUGH SECOND QUARTER 2008.

EXPLANATORY NOTES TO TABLE 31A

COLUMN (1)

EARNED PREMIUMS

The unadjusted earned premiums are shown for each year.

COLUMN (2)

INCURRED LOSSES

The unadjusted incurred losses are shown for each year.

COLUMN (3)

NORMAL INCURRED LOSSES

Normal losses which are shown for each year are defined as follows:

- for losses reported under CSP (for which month of loss detail is available), that portion of each month's losses which does not exceed 2.5 times that month's earned premiums.
- for losses reported under CRSP, SCOH and SMP (for which month of loss detail is not available), that part of each year's losses which does not exceed 0.733 times that year's earned premiums.

COLUMN (4)

NORMAL LOSS RATIO

For each year in the excess review period, the normal loss ratio is calculated as the ratio of the normal losses (for CSP data the sum of each month's normal losses) to the earned premiums for the same year.

COLUMN (5)

STATE EXCESS LOSS RATIO

The state excess loss ratio is the ratio of the state excess losses to the unadjusted earned premium. The state excess losses are determined by the following formulas:

•
$$EP \times \frac{20(LR-2.5)}{(LR-2.5)+20} \text{ if } LR > 2.5; \text{ otherwise } 0$$

for CSP, where EP = the monthly earned premiums, LR = the monthly loss ratio and the yearly state excess losses are the sum of the monthly state excess losses.

•
$$EP \times \frac{2.2(LR-.733)}{(LR-.733)+2.2} \text{ if } LR > 0.733; \text{ otherwise } 0$$

for CRSP, SCOH, SMP, where EP = the earned premiums and LR = the yearly loss ratio.

EXPLANATORY NOTES TO TABLE 31A (cont'd)

COLUMN (6)

REGIONAL EXCESS LOSS RATIO

If $LR > NLR$, then the regional excess loss ratio is:

regional excess loss ratio = $LR - SELR - NLR$

where $SELR$ = the state excess loss ratio,
 NLR = the normal loss ratio, and
 LR = the loss ratio

LINE (7)

STATE EXCESS COMPONENT

The state excess component is determined by dividing the sum of all state excess loss ratios by the sum of all normal loss ratios (where the sum is taken across all accident years).

LINE (8)

REGIONAL EXCESS COMPONENT

The regional excess component is determined by dividing the weighted average (determined, in each case, against the latest year unadjusted premium distribution) of the sum of regional excess loss ratios of all the states in the region by the weighted average of the sum of all loss ratio points retained by a state (normal and state excess loss ratios) of all the states in the region. See Table 31B for the appropriate BG II region for the state.

LINE (9)

STATE EXCESS MULTIPLIER

The state excess multiplier is derived by taking the product of the state excess component and the regional excess component.

TABLE 31B

BASIC GROUP II REGIONS

NORTHEAST REGION

CONNECTICUT
DELAWARE
DIST OF COLUMBIA
MAINE
MARYLAND
MASSACHUSETTS
NEW HAMPSHIRE
NEW JERSEY
NEW YORK
PENNSYLVANIA
RHODE ISLAND
VERMONT
VIRGINIA

PLAINS REGION

ARKANSAS
COLORADO
IOWA
KANSAS
MINNESOTA
MISSOURI
MONTANA
NEBRASKA
NORTH DAKOTA
OKLAHOMA
SOUTH DAKOTA
WYOMING

SOUTHEAST REGION

ALABAMA
FLORIDA
GEORGIA
LOUISIANA
MISSISSIPPI
NORTH CAROLINA
SOUTH CAROLINA
HAWAII

MIDWEST REGION

ILLINOIS
INDIANA
KENTUCKY
MICHIGAN
OHIO
TENNESSEE
WEST VIRGINIA
WISCONSIN

WEST REGION

ARIZONA
CALIFORNIA
IDAHO
NEVADA
NEW MEXICO
OREGON
UTAH
WASHINGTON
ALASKA

KENTUCKY

TABLE 32 - DEVELOPMENT OF SPECIAL CAUSES OF LOSS EXCESS MULTIPLIER

YEAR	(1) EARNED PREMIUMS	(2) INCURRED LOSSES	(3) NORMAL INCURRED LOSSES	(4) NORMAL LOSS RATIO	(5) STATE EXCESS LOSS RATIO
1986	4,434,606	1,929,271	1,929,271	0.435	
1987	5,139,456	1,314,622	1,314,622	0.256	
1988	5,170,620	2,473,742	2,473,742	0.478	
1989	4,963,548	2,979,486	2,979,486	0.600	
1990	5,383,290	5,485,957	3,565,026	0.662	0.357
1991	6,192,624	3,109,139	3,109,139	0.502	
1992	6,479,190	4,110,535	4,110,535	0.634	
1993	5,821,956	4,991,794	4,991,794	0.857	
1994	5,154,594	10,967,464	3,992,795	0.775	1.353
1995	5,166,249	3,556,217	3,556,217	0.688	
1996	5,485,884	7,114,489	5,915,007	1.078	0.219
1997	5,503,380	4,728,176	3,801,666	0.691	0.168
1998	5,428,914	9,469,071	4,307,631	0.793	0.951
1999	5,939,388	5,340,200	4,479,479	0.754	0.145
2000	7,458,549	8,306,222	4,849,811	0.650	0.464
2001	8,249,958	5,455,053	5,455,053	0.661	
2002	9,724,122	5,223,701	5,223,701	0.537	
2003	12,196,857	5,379,475	5,379,475	0.441	
2004	14,717,709	5,260,254	5,260,254	0.357	
2005	15,403,215	12,572,919	5,899,587	0.383	0.433
2006	15,717,960	6,839,878	6,839,878	0.435	
2007	16,223,352	5,984,144	5,984,144	0.369	
2008	14,265,687	5,026,008	5,026,008	0.352	
2009	15,521,577	17,254,819	10,689,910	0.689	0.423
2010	16,498,722	10,213,207	10,193,596	0.618	0.001
2011	16,504,830	11,902,125	11,902,125	0.721	
2012	16,867,896	12,541,696	12,541,696	0.744	
2013	17,334,564	7,236,353	7,236,353	0.417	
2014	18,401,255	13,832,984	10,317,604	0.561	0.191
2015	19,024,287	32,106,557	15,958,572	0.839	0.849
2016	19,079,477	5,897,118	5,897,118	0.309	
2017	19,588,312	6,426,751	6,426,751	0.328	
2018	20,142,451	8,583,665	8,556,503	0.425	0.001
TOTALS		253,613,092	200,164,549	19.039	5.555

(6) STATE EXCESS COMPONENT = (SELR / NLR) = 0.292

(7) STATE EXCESS MULTIPLIER = (1 + SEC) = 1.292

EXPLANATORY NOTES TO TABLE 32

SPECIAL CAUSES OF LOSS ADDITIONAL EXCESS LOSS FACTOR

COLUMN (1) EARNED PREMIUMS

These are the unadjusted earned premiums for each year.

COLUMN (2) INCURRED LOSSES

These are the unadjusted incurred losses for each year.

COLUMN (3) NORMAL INCURRED LOSSES

The normal incurred losses are shown for each year. The normal incurred losses are defined to be that portion of each month's losses which does not exceed 2.0 times the monthly earned premiums.

COLUMN (4) NORMAL LOSS RATIO

The normal loss ratio for each year is the ratio of the normal incurred losses for each year divided by the earned premiums for the year.

Column (4) = Column (3) ÷ Column (1)

COLUMN (5) EXCESS LOSS RATIO

The excess loss ratio for each year is the ratio of the excess losses to the earned premium for the year. The excess losses are calculated as the incurred losses minus the normal incurred losses for each year.

LINE (6) EXCESS COMPONENT

The excess component is determined by dividing the sum of the excess loss ratios by the sum of the normal loss ratios, where the sums are taken across all years in the excess review period.

LINE (7) EXCESS MULTIPLIER

The excess multiplier is derived by adding unity to the excess component.

OVERVIEW

APPLICATION OF CREDIBILITY

INTRODUCTION

Credibility, Z , is a weight given to the most recent body of data. The complement of credibility, $1-Z$, is the weight assigned to net trend. The final estimate is a weighted average obtained by using the formula $C = Z \times R + (1-Z) \times N$, where:

Z = credibility

C = final estimate

R = estimate based on the most recent data

N = net trend

Credibility may range from 0 to 1, where $Z=1$ is full credibility and $Z=0$ is no credibility. The actual numerical value of Z is calculated by considering how the state's volume of experience compares with an established full credibility standard. Credibility is capped at 25% if the credibility calculated is below 25%. See Tables 33, 33A, and 34 for a complete explanation of the credibility standards for Basic Group I, Basic Group II, and Special Causes of Loss.

KENTUCKY

TABLE 33 - BASIC GROUP I STATEWIDE CREDIBILITY CALCULATION

(1a)	FULL CREDIBILITY CLAIMS STANDARD FOR FREQUENCY WITH (P,K) = (95.00% , 5.00%)	1,537
(1b)	SEVERITY MODIFICATION FACTOR	8.700
(1c)	FULL CREDIBILITY CLAIMS STANDARD ADJUSTED FOR SEVERITY ((1a) X (1b))	13,372
(2)	MULTISTATE FIVE YEAR RATIO OF EARNED RISKS TO CLAIMS	344.398
(3)	FULL CREDIBILITY EARNED RISKS STANDARD (1c)X(2)	4,605,290
(4)	FIVE YEAR STATEWIDE EARNED RISKS	512,899
(5)	FIVE YEAR AGGREGATE LOSS COSTS	142,479,111
(6)	AGGREGATE LOSS COSTS PER EARNED RISK (5)/(4)	277.792
(7)	AGGREGATE LOSS COSTS FOR 100% CREDIBILITY (3) X (6)	1,279,312,720
(8)	STATEWIDE CREDIBILITY ((5)/(7))**(.5)	33.4%

KENTUCKY

TABLE 33A - BASIC GROUP II STATEWIDE CREDIBILITY CALCULATION

(1) FULL CREDIBILITY CLAIMS STANDARD	30,000
(2) MULTISTATE TEN YEAR RATIO OF EARNED RISKS TO CLAIMS	144.328
(3) FULL CREDIBILITY EARNED RISKS STANDARD (1)X(2)	4,329,840
(4) TEN YEAR STATEWIDE EARNED RISKS	991,117
(5) TEN YEAR AGGREGATE LOSS COSTS	203,666,419
(6) AGGREGATE LOSS COSTS PER EARNED RISK (5)/(4)	205.492
(7) AGGREGATE LOSS COSTS FOR 100% CREDIBILITY (3) X (6)	889,747,481
(8) STATEWIDE CREDIBILITY ((5)/(7))**(.5)	47.8%

KENTUCKY

TABLE 34 - SPECIAL CAUSES OF LOSS STATEWIDE CREDIBILITY CALCULATION

(1) FULL CREDIBILITY CLAIMS STANDARD	25,000
(2) MULTISTATE FIVE YEAR RATIO OF EARNED RISKS TO CLAIMS	181.539
(3) FULL CREDIBILITY EARNED RISKS STANDARD (1)X(2)	4,538,475
(4) FIVE YEAR STATEWIDE EARNED RISKS	487,181
(5) FIVE YEAR AGGREGATE LOSS COSTS	76,307,453
(6) AGGREGATE LOSS COSTS PER EARNED RISK (5)/(4)	156.631
(7) AGGREGATE LOSS COSTS FOR 100% CREDIBILITY (3) X (6)	710,865,878
(8) STATEWIDE CREDIBILITY ((5)/(7))**(.5)	32.8%

EXPLANATORY NOTES TO TABLES 33, 33A AND 34

BASIC GROUP I, BASIC GROUP II, AND SPECIAL CAUSES OF LOSS
STATEWIDE CREDIBILITY CALCULATION

LINE (1a)
(BGI only)

Full Credibility Claims Standard of Frequency

Based on a Poisson distribution, the minimum sample size of claims is determined such that the probability that the actual number of claims will be within 5% of the expected number of claims is greater than 95%.

LINE (1b)
(BGI only)

Severity Modification Factor

This factor, defined as $(1 + S^2 / M^2)$, is used to modify the claims standard to reflect variance due to severity, where S is the standard deviation and M is the mean of the loss severity distribution (on a normal loss basis).

LINE (1c) - BGI
LINE (1) - BGII, SCL

Full Credibility Claims Standard

For Basic Group I, this standard is the product of the frequency standard in line (1a) and the severity modification factor in line (1b). For Basic Group II and Special Causes of Loss, standards for full credibility of 30,000 claims for BGII and 25,000 claims for SCL were selected to balance stability and responsiveness.

LINE (2)

Multistate Experience Period Ratio of Earned Risks to Claims

This ratio was determined based on Commercial Statistical Plan data for the latest experience period (Five years for Basic Group I and Special Causes of Loss; Ten years for Basic Group II).

LINE (3)

Full Credibility Earned Risks Standard

To translate the claims standard to an equivalent standard based on earned risks, the claims standard (line (1c) for BGI, (1) for BGII and SCL) is multiplied by the multistate experience period ratio of earned risks to claims (line (2)).

LINE (4)

Experience Period Statewide Earned Risks

This is the number of earned risks in the state for the experience period.

EXPLANATORY NOTES TO TABLE 33, 33A, AND 34 (cont'd)

LINE (5) Experience Period Aggregate Loss Costs

These are the state's experience period adjusted aggregate loss costs.

LINE (6) Statewide Experience Period Ratio of Aggregate Loss Costs to Earned Risks

This ratio is determined by dividing the state's experience period adjusted aggregate loss costs by its experience period earned risks.

LINE (7) Full Credibility Aggregate Loss Costs Standard

To translate the risk standard into an aggregate loss cost standard on a state by state basis, the ratio (line (6)) is multiplied by the full credibility earned risks standard (line (3)).

LINE (8) Credibility

The state's credibility is calculated by using the square root credibility formula:

$$Z = \sqrt{\frac{P}{C}}$$

where Z = credibility,
P = statewide five-year adjusted aggregate loss costs (line (5)), and
C = full credibility aggregate loss costs standard (line (7)).

KENTUCKY
COMMERCIAL PROPERTY INSURANCE

SECTION D - ADDITIONAL SUPPORTING MATERIAL

Basic Group I Rating Group Definitions (Table 36)	D2-6
Special Causes of Loss Category Definitions (Table 37)	D7-9
Unadjusted Loss Costs, Incurred Losses, Experience Ratios (Tables 38 - 40)	D10-12
Loss Adjustment Expense Factors (Table 41)	D13-14

TABLE 36

BASIC GROUP I RATING GROUP DEFINITIONS

THE FOLLOWING CSP CLASSES COMPRISE THE BASIC GROUP I RATING GROUPS

01 APARTMENTS

- 0311 Apartments without Mercantile Occupancies - Up to 10 Units
- 0312 Apartments without Mercantile Occupancies - 11 to 30 Units
- 0313 Apartments without Mercantile Occupancies - Over 30 Units
- 0321 Apartments with Mercantile Occupancies - Up to 10 Units
- 0322 Apartments with Mercantile Occupancies - 11 to 30 Units
- 0323 Apartments with Mercantile Occupancies - Over 30 Units
- 0331 Residential Condominiums without Mercantile Occupancies - Up to 10 Units
- 0332 Residential Condominiums without Mercantile Occupancies - 11 to 30 Units
- 0333 Residential Condominiums without Mercantile Occupancies - Over 30 Units
- 0341 Residential Condominiums with Mercantile Occupancies - Up to 10 Units
- 0342 Residential Condominiums with Mercantile Occupancies - 11 to 30 Units
- 0343 Residential Condominiums with Mercantile Occupancies - Over 30 Units

02 OTHER HABITATIONAL

- 0074 Boarding and Lodging Houses, Rooming Houses, Fraternities and Sororities, Dormitories - Up to 10 Units
- 0075 Boarding and Lodging Houses, Rooming Houses, Fraternities and Sororities, Dormitories - 11 to 30 Units
- 0076 Boarding and Lodging Houses, Rooming Houses, Fraternities and Sororities, Dormitories - Over 30 Units
- 0077 Convents, Monasteries and Rectories, Orphan Homes, Nurses' Homes, Sisters' Homes - Up to 10 Units
- 0078 Convents, Monasteries and Rectories, Orphan Homes, Nurses' Homes, Sisters' Homes - 11 to 30 Units
- 0079 Convents, Monasteries and Rectories, Orphan Homes, Nurses' Homes, Sisters' Homes - Over 30 Units
- 0196 Dwellings Written in Conjunction with Commercial Risks from the Commercial Lines Manual - 1 Family
- 0197 Dwellings Written in Conjunction with Commercial Risks from the Commercial Lines Manual - 2 Family
- 0198 Dwellings Written in Conjunction with Commercial Risks from the Commercial Lines Manual - 3 and 4 Family
- 0300 Large Area Housing Developments (Special Rating Treatment)

03 RESTAURANTS & BARS

- 0541 Bars and Taverns
- 0542 Restaurants with Commercial Cooking
- 0545 Restaurants with Limited Cooking

04 OTHER MERCANTILES

- 0431 Sole Occupancy Mercantile, Over 15,000 Square Feet, Building Coverage, Other than Food Risks
- 0432 Sole Occupancy Mercantile, Over 15,000 Square Feet, Food Risks, Buildings and Personal Property
- 0433 Multiple Occupancy Mercantile, Over 15,000 Square Feet, Building Coverage Only, Not Fire Class Rated
- 0434 Multiple Occupancy Mercantile, Less than 15,000 Square Feet, Building Coverage Only, Not Fire Class Rated
- 0511 Risks Having Low Susceptibility Personal Property, NOC
- 0512 Tire, Battery and Accessory Dealers Without Tire Recapping and Vulcanizing
- 0520 Wearing Apparel, Textiles, Shoes
- 0531 Alcoholic Beverages other than Bars
- 0532 Food Products including Retail Bakeries (no baking and no cooking on premises; sales only); Beverages other than Alcoholic
- 0533 Retail Bakeries - Baking on Premises (No delivery to other outlets)
- 0534 Food Products with Limited Cooking, Excluding Bakeries
- 0550 Motor Vehicle (Auto, Aircraft, Marine) Sales, No Repair
- 0561 Boat and Marine Supply Dealers
- 0562 Drugs
- 0563 Electrical Goods, Hardware and Machinery
- 0564 Furniture and Home Furnishings other than Appliances
- 0565 Jewelry
- 0566 Sporting Goods
- 0567 Risks Having Moderate Susceptibility Personal Property, NOC
- 0570 Risks Having High Susceptibility Personal Property, NOC
- 0580 Greenhouses
- 0581 Multiple Occupancy Mercantile, Fire Class Rated, without furniture Occupant
- 0582 Multiple Occupancy Mercantile, Fire Class Rated, with furniture Occupant

05 PUBLIC BUILDINGS

- 0701 Governmental Offices
- 1000 Penal Institutions
- 1051 Museums, Libraries, Art Galleries (non-profit)
- 1070 Other Public Buildings, Fire Dept., Police, Water/Sewer

06 CHURCHES

- 0900 Churches and Synagogues

07 SCHOOLS

- 1052 Schools, Academic

08 OFFICE AND BANKS

- 0702 Non-Governmental Offices and Banks

09 RECREATIONAL FACILITIES

- 0755 Golf Clubs, Tennis Clubs and Similar Sports Facilities with Cooking
- 0756 Golf Clubs, Tennis Clubs and Similar Sports Facilities without Cooking
- 0757 Clubs, NOC, Including Fraternal and Union Halls
- 0831 Motion Picture Studios
- 0832 Theaters
- 0833 Drive-in Theaters
- 0834 Skating Rinks--Roller Rinks
- 0841 Bowling Alleys
- 0843 Halls and Auditoriums
- 0844 Recreational Facilities, NOC
- 0845 Boys' and Girls' Camps
- 0846 Dance Halls, Ballrooms & Discotheques
- 0951 Gambling Casinos with Restaurants
- 0952 Gambling Casinos without Restaurants

10 HOTELS & MOTELS

- 0742 Motels and Hotels with Restaurant - Up to 10 Units
- 0743 Motels and Hotels with Restaurant - 11 to 30 Units
- 0744 Motels and Hotels with Restaurant - Over 30 Units
- 0745 Motels and Hotels without Restaurant - Up to 10 Units
- 0746 Motels and Hotels without Restaurant - 11 to 30 Units
- 0747 Motels and Hotels without Restaurant - Over 30 Units

11 HOSPITALS & NURSING HOMES

- 0851 Hospitals
- 0852 Nursing and Convalescent Homes

12 BUILDINGS UNDER CONSTRUCTION

- 1150 Buildings Under Construction

13 MOTOR VEHICLE RISKS

- 0931 Auto Parking Garages, Car Washes
- 0932 Gasoline Service Stations
- 0933 Aircraft Hangars with Repairing, Motor Vehicle Repairing Including Auto Body Shops, with or without Sales
- 0934 Tire Recapping and Vulcanizing with or without Sales
- 0940 Aircraft Hangars without Repairing

14 OTHER NON-MANUFACTURING

- 0911 Dry Cleaner and Dyeing Plants, other than Self-Service
- 0912 Laundries, other than Self-Service
- 0913 Self-Service Laundries and Dry Cleaners
- 0921 Light Hazard Service Occupancies
- 0922 Services Occupancies, Other than Light Hazard, NOC
- 0923 Funeral Homes
- 1180 Vacant Buildings
- 1185 Billboards and Signs
- 1190 Yard Property, NOC, Including Property in the Open

15 STORAGE

- 1200 Piers, Wharves, Bridges
- 1211 Freight Terminals
- 1212 General Storage Warehouses - Bailee
- 1213 Miscellaneous Products Storage - (other than Retail or Wholesale or Cold Storage)
- 1220 Household Goods Storage
- 1230 Cold Storage Warehouses
- 1251 Farm Products (other than Grain, Cotton, Tobacco)
- 1252 Grain, Seed, Bean Warehouses
- 1300 Cotton Compresses and Storage
- 1400 Waste and Reclaimed Material, including Yards
- 1450 Whiskey and Liquor Warehouses in Connection with Distilleries
- 1501 Tobacco Warehouses, Storage
- 1502 Tobacco Sales Warehouses
- 1550 Grain Elevators - Terminal
- 1610 Grain Elevators - Country
- 1650 Building Supply Yards, including Retail Lumberyards, Coal and Coke Yards
- 1700 Mill Yards
- 1751 Oil Distributing, Oil Terminals and LPG Tank Farms, Including Stock
- 1752 Oil Distributing, Oil Terminals and LPG Tank Farms, Excluding Stock

17 FOOD MANUFACTURING

- 2000 Dairy Products
- 2059 Meat, Poultry and Fish Products
- 2150 Grain Milling, Including Feed, Stock, Flour Mills
- 2200 Bakeries and Bakery Products
- 2250 Fruit, Nut and Vegetable Products
- 2300 Sugar, Molasses and Syrup Refining
- 2350 Beverages excluding Alcoholic Beverages
- 2400 Breweries
- 2459 Distilleries and Wineries
- 2550 Tobacco and Tobacco Products
- 2600 Food Products, NOC

18 WOOD MANUFACTURING

- 3809 Basic Wood Production including Veneer and Plywood Plants
- 3959 Furniture and Other Wood Products, NOC

19 WEARING APPAREL

- 2800 Textile Mill Products - Natural and Synthetic
- 3009 Clothing and Apparel including Furs and Finished Products

20 CHEMICAL MANUFACTURING

- 5000 Chemicals and Pharmaceuticals - Low Hazard
- 5050 Chemicals and Pharmaceuticals - Moderate Hazard
- 5100 Chemicals and Pharmaceuticals - High Hazard

21 METAL MANUFACTURING

- 6810 Heavy Metalworking including Basic Metalwork
- 6850 Metalworking, NOC

22 OTHER MANUFACTURING

- 2750 Cotton Gins
- 3409 Leather and Leather Products
- 4400 Paper Manufacturing
- 4450 Paper and Paper Products Processing
- 4809 Printing
- 5500 Plastic Products
- 5759 Rubber Products
- 6009 Stone, Glass, Concrete, Gypsum, Brick, Tile and Clay Products, Abrasives, Plaster and Other Mineral, NOC
- 6210 Mining Other than Coal
- 6250 Coal Mining
- 6900 Precision Products, Electronic, Radio and Television Manufacturing

TABLE 37

SPECIAL CAUSES OF LOSS CATEGORY DEFINITIONS

CATEGORY 01 - BUILDING AND TIME ELEMENT COVERAGE

CATEGORY 02 - APARTMENT AND CONDOMINIUM CONTENTS COVERAGE

CATEGORY 03 - OFFICE CONTENTS COVERAGE

CATEGORIES 04, 05, & 06 - MERCANTILE CONTENTS COVERAGE

An establishment in which the principal business is the retail or wholesale buying or selling of goods, wares and merchandise. Included are bars, grills and restaurants.

CATEGORY 04 - MERCANTILE CONTENTS COVERAGE (HIGH)

Occupancy classes 0511, 0520, 0550, 0562, 0566, 0567, 0581, 0702, 1180, 1185, 1190, 1200, 1211, 1212, 1213, 1251, 1300, 1400, 1751, or 1752

CATEGORY 05 - MERCANTILE CONTENTS COVERAGE (MEDIUM)

Occupancy classes not listed in Category 04 or Category 06

CATEGORY 06 - MERCANTILE CONTENTS COVERAGE (LOW)

Occupancy classes 0512, 0541, 0563, 0921, 0922, 0933, 0940, or 1230

CATEGORY 07 - MOTEL & HOTEL CONTENTS COVERAGE

Hotels, motels, motor inns, motor lodges, tourist courts and similar risks whose business is principally the providing of lodging accommodations for transients, including premises and operations necessary or incidental to such lodging accommodations.

TABLE 37

SPECIAL CAUSES OF LOSS CATEGORY DEFINITIONS

CATEGORIES 08 & 09 - INSTITUTIONAL CONTENTS COVERAGE

An establishment principally occupied by an educational, religious, sanitary, charitable or governmental organization. It does not include buildings containing manufacturing of any kind, or sale, storage, processing, or repair of clothing or furniture, or paper or rag storage, or sorting or supplying of food or lodging to itinerants.

CATEGORY 08 - INSTITUTIONAL CONTENTS COVERAGE (HIGH)

Occupancy classes 0701, 0702, 0851, 0921, 1051, or 1052

CATEGORY 09 - INSTITUTIONAL CONTENTS COVERAGE (LOW)

Occupancy classes not listed in Category 08

CATEGORIES 10 & 11 - INDUSTRIAL & PROCESSING CONTENTS COVERAGE

An establishment in which the principal activity is the manufacturing of goods and wares or processing of raw materials or finished goods.

CATEGORY 10 - INDUSTRIAL & PROCESSING CONTENTS COVERAGE (HIGH)

Occupancy classes 1252, 1300, 1400, 1700, 2000, 2059, 2150, 2200, 2250, 2300, 2350, 2400, 2459, 2550, 2600, 2750, 2800, 2805, 3009, 3409, 3809, 3959, or 4400

CATEGORY 11 - INDUSTRIAL & PROCESSING CONTENTS COVERAGE (LOW)

Occupancy classes not listed in Category 10

TABLE 37

SPECIAL CAUSES OF LOSS CATEGORY DEFINITIONS

CATEGORIES 12 & 13 - SERVICE CONTENTS COVERAGE

An establishment in which the principal operation is the providing of a personal or commercial service. Included are establishments providing entertainment or recreation; warehousing of property of others; and automobile risks, such as service, repair or garaging of automobiles and parking lots.

CATEGORY 12 - SERVICE CONTENTS COVERAGE (HIGH)

Occupancy classes 0520, 0542, 0545, 0550, 0567, 0702, 0755, 0831, 0832, 0911, 0912, 0913, 0921, 0931, 0932, 0934, 1213, or 4809

CATEGORY 13 - SERVICE CONTENTS COVERAGE (LOW)

Occupancy classes not listed in Category 12

CATEGORY 14 - CONTRACTOR CONTENTS COVERAGE

An establishment in which the principal operation is that of installation, construction, demolition or maintenance. This includes any owner/contractor, general contractor or sub-contractor whether or not he or she actually performs any part of such work or has employees on the site.

KENTUCKY
TABLE 38

BASIC GROUP I

UNADJUSTED AGGREGATE LOSS COSTS, LOSSES, AND EXPERIENCE RATIOS

YEAR	TOTAL UNADJUSTED LOSS COSTS	TOTAL UNADJUSTED INCURRED LOSSES	EXPERIENCE RATIO
2014	20,036,914	13,874,442	0.692
2015	21,122,190	13,617,475	0.645
2016	21,486,237	23,403,220	1.089
2017	21,992,142	25,244,736	1.148
2018	22,130,923	15,724,278	0.711

KENTUCKY
TABLE 39

BASIC GROUP II

UNADJUSTED AGGREGATE LOSS COSTS, LOSSES, AND EXPERIENCE RATIOS

YEAR	TOTAL UNADJUSTED LOSS COSTS	TOTAL UNADJUSTED INCURRED LOSSES	EXPERIENCE RATIO
2009	8,474,703	43,909,720	5.181
2010	8,561,114	5,866,626	0.685
2011	8,350,656	16,399,394	1.964
2012	8,876,345	66,057,313	7.442
2013	9,770,930	8,051,306	0.824
2014	10,757,725	7,017,966	0.652
2015	11,534,237	10,902,130	0.945
2016	11,812,529	13,094,048	1.108
2017	12,791,936	21,721,179	1.698
2018	13,809,619	5,613,787	0.407

KENTUCKY
TABLE 40

SPECIAL CAUSES OF LOSS

UNADJUSTED AGGREGATE LOSS COSTS, LOSSES, AND EXPERIENCE RATIOS

YEAR	TOTAL UNADJUSTED LOSS COSTS	TOTAL UNADJUSTED INCURRED LOSSES	EXPERIENCE RATIO
2014	9,901,396	13,832,984	1.397
2015	10,237,474	32,106,557	3.136
2016	10,266,996	5,897,118	0.574
2017	10,541,024	6,426,751	0.610
2018	10,839,348	8,583,665	0.792

OVERVIEW

LOSS ADJUSTMENT EXPENSE FACTORS

OBJECTIVE	The reported indemnity losses must be loaded for any loss adjustment expenses (LAE) that are not reported in statistical detail to ISO.
PROPERTY COVERAGES	For the property coverages, only the incurred indemnity losses are reported to ISO under the Commercial Statistical Plan. All loss adjustment expenses must be loaded in. A factor representing the ratio of incurred losses plus all LAE to incurred losses was selected based on multistate financial data (see Table 41 for the underlying data).
EXPERIENCE INCLUDED	Fire and Allied Lines incurred loss and loss adjustment expense experience for 2013-2017 is displayed on Table 41. The experience is based on Insurance Expense Exhibit information compiled by A.M. Best. For Allied Lines, the loss adjustment expense ratios [Table 41, line (3)(b)] for a few years are distorted by unusual catastrophe-related losses and loss adjustment expenses. The selected Allied Lines loss adjustment expense factor used for this review was selected after consideration of this distortion and based on a review of average loss adjustment expense ratios over a longer time period.
SELECTED FACTORS	The following factors have been used in this review to load incurred losses for all loss adjustment expenses:

Basic Group I	1.100
Basic Group II	1.125
Special Causes of Loss	1.125

TABLE 41

FIRE AND ALLIED LINES INSURANCE
COUNTRYWIDE LOSS ADJUSTMENT EXPENSE EXPERIENCE (A)

	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>Selected</u>
(1) Fire						
(a) Direct Losses Incurred	4,684,461	5,449,566	5,303,941	5,626,602	7,720,282	
(b) Direct Loss Adjustment Expense Incurred	466,590	540,067	520,392	540,922	688,647	
(2) Allied Lines						
(a) Direct Losses Incurred	4,800,449	4,486,897	4,725,289	6,319,875	17,490,979	
(b) Direct Loss Adjustment Expense Incurred	700,795	617,569	650,048	707,895	1,112,736	
(3) Loss Adjustment Expense as a Ratio to Losses						
(a) Fire (1b) / (1a)	10.0%	9.9%	9.8%	9.6%	8.9%	10.0%
(b) Allied Lines (2b) / (2a)	14.6%	13.8%	13.8%	11.2%	6.4%	12.5%

NOTE: All dollar amounts are displayed in thousands.

(A) Items (1) and (2) are based on Insurance Expense Exhibit information compiled by A. M. Best.

KENTUCKY
COMMERCIAL PROPERTY
LOSS COST LEVEL REVIEW
ACTUARIAL ANALYSIS SUPPLEMENT

PURPOSE This document provides discussion and analysis of changes in the experience and adjustments used to derive the advisory prospective loss cost level indications.

MONOLINE The indicated statewide monoline changes are:
INDICATIONS

<u>Subline</u>	<u>Current Review</u>	<u>Prior Review</u>
Basic Group I	-3.3%	-3.7%
Basic Group II	2.4%	2.8%
Special Causes of Loss	0.5%	-0.8%
All Coverages Combined	-0.6%	-0.9%

The prior review indications were not filed. There was no change in the Implicit Package Modification Factors since the prior review.

Special Causes of Loss (SCL) Indications on an Old Category Basis

Given below are the current SCL review indications on an old category basis for those companies that have not yet adopted the current SCL rating that was introduced in conjunction with the limit of insurance curves.

<u>Category</u>	<u>Loss Cost Change</u>
01 Buildings	-1.5%
02 Apartment and Condominium Contents	0.0%
03 Office Contents	+2.5%
04 Mercantile, Motel-Hotel, and Institutional Contents	+1.8%
05 Service, Industrial-Processing and Contractors Contents	-4.4%
Personal Property (Contents) Excluding Theft	+0.2%

Given below is a brief discussion and comparison of the multistate factors (premium and loss trend, loss adjustment expense, and loss development) used in this year's and last year's reviews. The discussion is followed by a state specific analysis by subline and a list of events occurring during the experience period in this state that have been identified as catastrophes by ISO's Property Claims Services.

DATA QUALITY

Statistical plan data reported to ISO is first processed through a system of rigorous automated data verification processes so that only valid data is used for ratemaking. Subsequent to this initial data submission review, additional analyses involving an even more customized data review for this line were performed by staff. During these processes, various data records were excluded from the review, corrected or adjusted. Specifically, an on-leveling approach was used to determine aggregate loss costs at current level rather than the extension-of-exposures method for some reported exposures, and various loss cost multipliers have been adjusted prior to their use in the calculations. The ISO staff responsible for this loss cost review also reviewed the data for reasonableness.

LOSS ADJUSTMENT EXPENSE/LOSS DEVELOPMENT FACTORS

Loss adjustment expense factors have remained the same at 1.100 for BG I and 1.125 for BG II and SCL. Loss development factors changed slightly but are still relatively close to unity for all sublines and years.

LOSS TREND FACTORS

Given below is a comparison of the external trend factors, loss trend adjustments (LTAs) and total loss trend factors for the current and prior reviews.

External Trend

The prospective annual rates of change based on the external indices (Xactware for Buildings, PPI for Contents, and IMSEP/RSALLES for Time Element) for the current and prior year reviews are:

<u>Coverage</u>	<u>Current Review</u>	<u>Prior Review</u>	<u>Change</u>
Buildings	3.00%	+2.5%	+0.5%
Contents	1.90%	+1.2%	+0.6%
Time Element	0.90%	-0.1%	+1.3%

Loss Trend Adjustments (LTAs)

The loss trend adjustment factors underlying the current and prior reviews are:

<u>Subline</u>	<u>Current Review</u>			<u>Prior Review</u>		
	<u>Bldg.</u>	<u>Cnts.</u>	<u>TE</u>	<u>Bldg.</u>	<u>Cnts.</u>	<u>TE</u>
Basic Group I	-0.3%	+0.7%	+2.8%	-0.4%	+0.5%	+2.5%
Basic Group II	+0.2%	+0.6%	+2.6%	+0.5%	+0.8%	+2.2%
Special Causes of Loss	+0.2%	0.0%	+2.8%	+0.3%	+0.5%	+2.5%

Total Annual Loss Trend

The prospective total annual loss trend factors are given below and are calculated as the product of the external trend factors and loss trend adjustment factors.

<u>Subline</u>	<u>Current Review</u>			<u>Prior Review</u>		
	<u>Bldg.</u>	<u>Cnts.</u>	<u>TE</u>	<u>Bldg.</u>	<u>Cnts.</u>	<u>TE</u>
Basic Group I	2.7%	2.6%	3.7%	+2.1%	+1.7%	+2.4%
Basic Group II	3.2%	2.5%	3.5%	+3.0%	+2.0%	+2.8%
Special Causes of Loss	3.2%	1.9%	3.7%	+2.8%	+1.7%	+2.4%

CHANGE IN
AVERAGE LOSS
TREND

The changes in average loss trend from current year to prior year are:

<u>Subline</u>	<u>Change in Average Trend</u>
Basic Group I	+2.1%
Basic Group II	+0.2%
Special Causes of Loss	+0.5%

Average loss trend is calculated as a weighted average of the total loss trend from the midpoint of the experience year to one year past the assumed effective date for each year in the experience period based on the statewide loss cost level review year weights (.10, .15, .20, .25, .30 for BG I and SCL, and 0.10 for all years for BG II). Total loss trend includes the effect of Current Cost Factors to bring losses to the latest level of external cost information, Loss Projection Factors to project from the external cost level to one year past the assumed effective date, and Loss Trend Adjustment factors over the entire trend period.

PREMIUM TREND
FACTORS

The prospective annual premium trend factors, based on annual changes in amounts of insurance written, for the current and prior reviews are:

<u>Coverage</u>	<u>Current Review</u>	<u>Prior Review</u>	<u>Change</u>
Buildings	+2.6%	+2.0%	+0.6%
Contents	+1.6%	+1.7%	-0.1%
Time Element	+0.6%	+1.0%	-0.5%

NET TREND

The prospective annual net (loss ÷ premium) trend factors for the current and prior year reviews are:

<u>Subline</u>	<u>Current Review</u>	<u>Prior Review</u>	<u>Change</u>
Basic Group I	+0.6%	+0.2%	+0.4%
Basic Group II	+0.8%	+0.8%	0.0%
Special Causes of Loss	+0.6%	+0.5%	+0.1%

BASIC GROUP I

The statewide five year weighted average experience ratio, before credibility weighting, increased by 5.3%, from 0.722 in the prior review to 0.760 in the current review. The increase is due to a lower-than-average experience ratio of 0.569 for 2013 exiting the experience period. The monoline relativity decreased by 1.6%, due to a higher-than-overall monoline experience of 1.096 for 2013 exiting the experience period, and a lower-than-overall monoline experience of 0.361 for 2018 entering the experience period.

Statewide Loss Cost Level Review

	<u>Current Review</u>	<u>Prior Review</u>	<u>Ratio</u>
Weighted Experience Ratio	0.760	0.722	1.053
Credibility	0.334	0.332	1.006
Expected Experience Ratio	1.009	1.002	1.007
Coverage Change	0.926	0.909	1.019
Monoline Relativity	1.042	1.059	0.984
Monoline Change	0.967	0.963	1.004

BASIC GROUP II

The statewide ten year weighted average experience ratio, before credibility weighting, decreased by 4.0%, from 1.036 in the prior review to 0.995 in the current review. The decrease is due to a higher-than-average experience ratio of 1.427 for 2008 exiting the experience period, a lower-than-average experience ratio of 0.532 for 2018 entering the experience period. The monoline relativity increased by 1.3%.

Statewide Loss Cost Level Review

	<u>Current Review</u>	<u>Prior Review</u>	<u>Ratio</u>
Weighted Experience Ratio	0.995	1.036	0.960
Credibility	0.478	0.480	0.996
Expected Experience Ratio	1.014	1.008	1.006
Coverage Change	1.005	1.021	0.984
Monoline Relativity	1.0187	1.0056	1.013
Monoline Change	1.024	1.027	0.997

SPECIAL CAUSES OF LOSS

The statewide five year weighted average experience ratio, before credibility weighting, decreased by 2.6%, from 0.980 in the prior review to 0.955 in the current review. The decrease is due to a lower-than-average experience ratio of 0.901 for 2018 entering the experience period. The monoline relativity increased by 1.7% due to a lower-than-overall monoline experience of 0.654 for 2013 exiting the experience period.

Statewide Loss Cost Level Review

	<u>Current Review</u>	<u>Prior Review</u>	<u>Ratio</u>
Weighted Experience Ratio	0.955	0.980	0.974
Credibility	0.328	0.337	0.973
Expected Experience Ratio	1.012	1.005	1.007
Coverage Change	0.993	0.997	0.996
Monoline Relativity	1.013	0.996	1.017
Monoline Change	1.005	0.992	1.013

PROPERTY
CLAIMS SERVICES
INFORMATION

The following events have been identified by Property Claims Services as catastrophes occurring in this state from 1/1/1990 through 12/31/2018.

<u>Date From</u>	<u>Date To</u>	<u>Perils</u>
1/29/2008	1/30/2008	Hail, Tornadoes, Wind
2/5/2008	2/6/2008	Flooding, Hail, Tornadoes, Wind
9/12/2008	9/14/2008	Hurricane Ike - Flooding, Tornadoes, Wind
1/26/2009	1/28/2009	Flooding, Freezing, Ice, Snow
2/10/2009	2/13/2009	Flooding, Hail, Tornadoes, Wind
3/7/2009	3/8/2009	Flooding, Hail, Tornadoes, Wind
4/9/2009	4/11/2009	Flooding, Hail, Tornadoes, Wind
5/7/2009	5/9/2009	Flooding, Hail, Tornadoes, Wind
6/10/2009	6/18/2009	Flooding, Hail, Tornadoes, Wind
8/4/2009	8/4/2009	Flooding, Hail, Wind
4/30/2010	5/3/2010	Flooding, Hail, Tornadoes, Wind
10/26/2010	10/28/2010	Flooding, Hail, Tornadoes, Wind
4/3/2011	4/5/2011	Flooding, Hail, Tornadoes, Wind
4/19/2011	4/21/2011	Hail, Tornadoes, Wind
4/22/2011	4/28/2011	Flooding, Hail, Tornadoes, Wind
5/20/2011	5/27/2011	Flooding, Hail, Tornadoes, Wind
2/28/2012	2/29/2012	Flooding, Hail, Tornadoes, Wind
3/2/2012	3/3/2012	Flooding, Hail, Tornadoes, Wind
4/28/2012	4/29/2012	Hail, Tornadoes, Wind
6/28/2012	7/2/2012	Flooding, Hail, Tornadoes, Wind
11/17/2013	11/18/2013	Flooding, Hail, Tornadoes, Wind
12/20/2013	12/23/2013	Freezing, Ice, Snow, Wind
1/5/2014	1/8/2014	Freezing, Ice, Snow, Wind
2/16/2015	2/22/2015	Freezing, Ice, Snow, Wind
3/3/2015	3/5/2015	Flooding, Freezing, Ice, Snow, Wind
4/2/2015	4/3/2015	Flooding, Hail, Tornadoes, Wind
4/7/2015	4/10/2015	Flooding, Hail, Tornadoes, Wind
4/24/2015	4/28/2015	Flooding, Hail, Tornadoes, Wind
7/12/2015	7/14/2015	Flooding, Hail, Tornadoes, Wind
1/22/2016	1/24/2016	Flooding, Freezing, Ice, Snow, Wind
5/7/2016	5/10/2016	Flooding, Hail, Tornadoes, Wind
7/5/2016	7/7/2016	Flooding, Hail, Tornadoes, Wind
2/28/2017	3/2/2017	Flooding, Hail, Tornadoes, Wind
3/26/2017	3/28/2017	Hail, Tornadoes, Wind
4/4/2017	4/6/2017	Flooding, Hail, Tornadoes, Wind
4/28/2017	5/1/2017	Flooding, Hail, Tornadoes, Wind
5/27/2017	5/28/2017	Flooding, Hail, Tornadoes, Wind
2/24/2018	2/26/2018	Flooding, Hail, Tornadoes, Wind
4/3/2018	4/5/2018	Flooding, Hail, Tornadoes, Wind
5/29/2018	6/1/2018	Flooding, Hail, Tornadoes, Wind
7/19/2018	7/22/2018	Flooding, Hail, Tornadoes, Wind
11/14/2018	11/16/2018	Flooding, Freezing, Ice, Snow, Wind

PROPERTY
CLAIMS SERVICES
INFORMATION
(cont'd)

ISO's Property Claims Services defines a catastrophe as an event that:

- reaches a threshold dollar amount of total insured property losses, and
- affects a significant number of property and casualty insurance policyholders and property and casualty insurers.

From 1949 to 1981, the threshold was \$1 million. From 1982 to 1996, it was \$5 million, and since January 1, 1997, the threshold has been \$25 million.

All of the events listed above may not have resulted in unexpected loss experience for commercial property coverage in this state since catastrophes are defined based on total insured property losses spreading across state lines and lines of business.

For more information concerning Catastrophe Claims Services, please see "Persons to Contact" in the circular cover letter.
